The
SHIPPING WORLD
AND SHIPBUILDING & MARINE ENGINEERING NEWS

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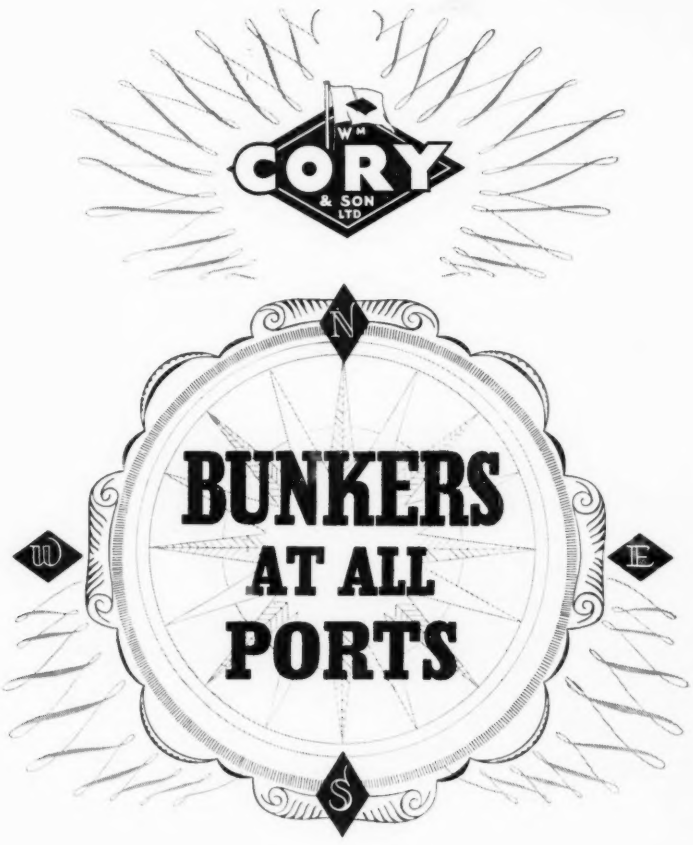

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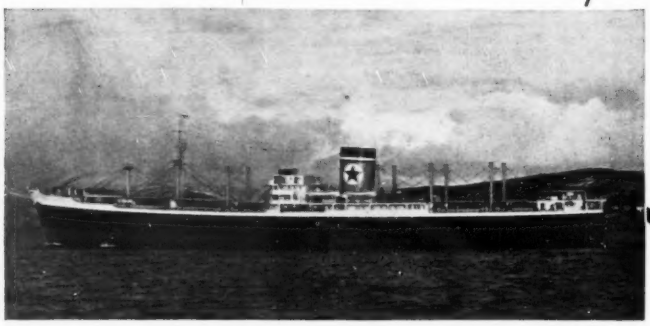

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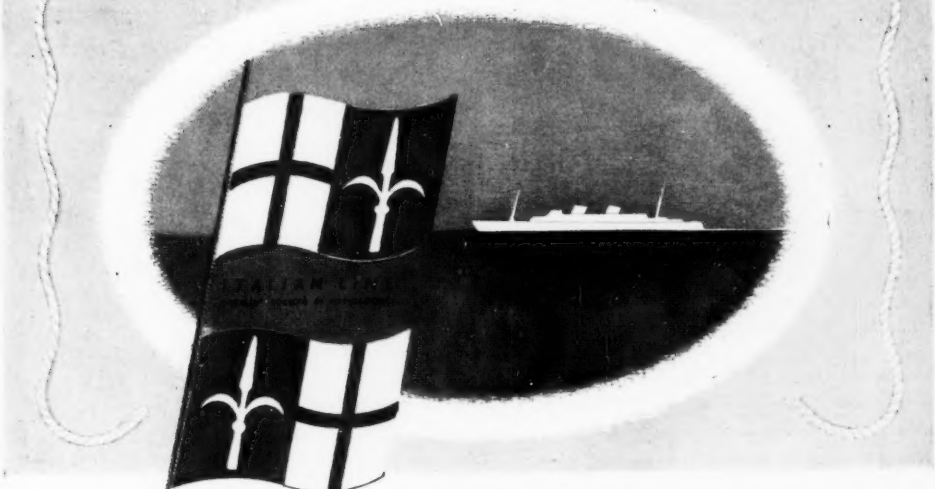

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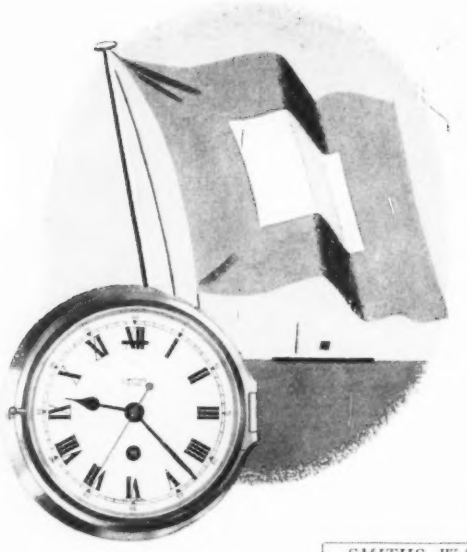

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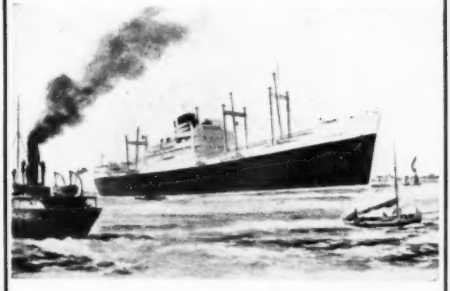

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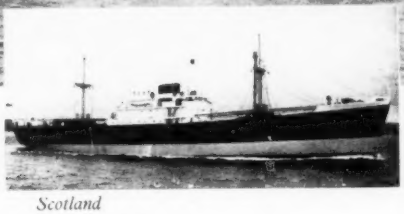

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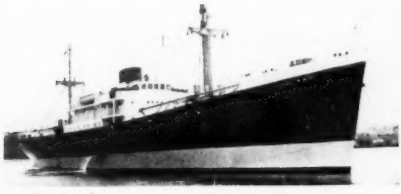

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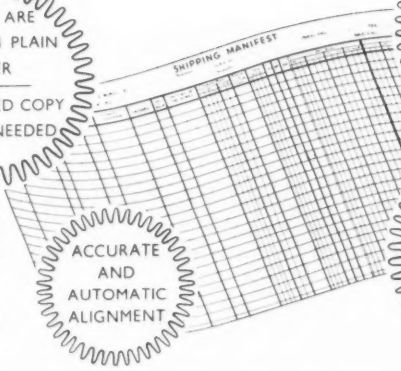

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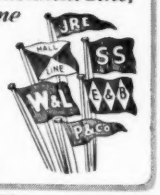

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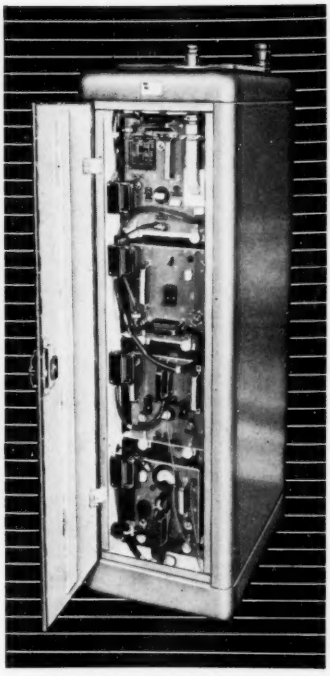

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SHIPPING AND THE NEW GOVERNMENT

IT WILL not be, presumably, until next April, when the Government presents its first Budget, that the shipping industry will know how far the case for taxation reform, admirably put forward by the Chamber of Shipping, will have succeeded. Some indications of the Government's attitude towards the maritime industries, however, may be revealed in the arrangements which will be made to administer the proposed excess profits tax at the beginning of the year. Will the profits that shipowners are now admittedly making be attributed directly to the rearmament programme, and, therefore, subjected to additional taxation? Or will a more realistic approach to this international industry be made, which will allow profits to be set aside, before taxation, for the sole purpose of renewing the efficiency and earning power of the British mercantile marine? Time alone will tell, although in view of the country's economic and financial straits, it will not do to be too optimistic. Although the Government has, in Lord Leathers and Mr. John Maclay, two experienced shipowners to guide it on matters of maritime policy, it is the Chancellor of the Exchequer who must have the final decision in fiscal matters.

Meanwhile there are other matters of maritime policy in which an early lead may be expected from the new Minister of Transport. To what extent will he follow the path trodden by his predecessor, Mr. Alfred Barnes, as regards matters which affect the shipping industry? Mr. Barnes was successful, for example, in avoiding any major decision, under the Transport Act, regarding the practicability or desirability of accepting any of the proposals for the centralisation of port authorities put forward by the Docks and Inland Waterways Executive. A scheme for the Clyde, for example, was submitted to the Minister last February, despite the strong opposition of the shipping and other maritime interests in the area. Is the new Minister likely to accept the scheme? It is, perhaps, reasonable to hazard a guess that before wasting time on unwanted measures of centralisation, he will devote his attention to the urgent problem in United Kingdom ports today—speeding up the turnround of shipping.

Then there is the vexed question of the restrictions on the sale of British ships abroad. Mr. Barnes was able eventually to relax certain of these restrictions in the case of vessels of 15 years of age or more, but he declined to go any further. Mr. Maclay knows as much as anybody about this traditional method of conducting a shipping enterprise, by selling old ships at high prices in order to acquire the funds to build new and more efficient vessels with a higher earning power. But does the decision rest with the Minister of Transport? It is probable that the defence authorities will be tempted to continue to look askance at the possibility of any diminution of British tonnage through sales abroad, but can it not be asserted that, in the long term, the policy of restricting sales abroad will have the effect of permanently reducing the strength as well as the efficiency of the British mercantile marine? And in this question the Treasury again has an interest, for if one of its most urgent problems is the balance of payments, then it should welcome any increase in the earnings of foreign currency which can be secured immediately from the sale of obsolescent or uneconomic ships at the fantastically high prices which can be obtained today. In the long term, also, the Treasury would benefit from the sale of these unwanted ships abroad, since it can ensure that modern ships will be built with the proceeds to enable the shipping industry in the future to meet the growing foreign competition and add to the invisible exports it brings in, which already amount to something like £150,000,000 a year. That is a fine achievement, and it is the industry's strongest argument in favour of reasonable treatment from the Conservative, or any other, Government.

Current Events

The Future of Steel

THE CASE for the nationalisation of steel was always a weak one and it will be difficult for the Socialists to whip up enthusiasm in opposing the Government's decision to repeal the legislation which was so hastily passed last session. State ownership and management have proved inefficient. We are resigned to coal, the railways, power and light being nationalised for all time, and the only hope for the future lies in a more human touch, which means decentralisation. But steel is in a class apart and the Government has little to fear from the Opposition and, as to the threat of a reversal of policy when it has a majority in the House of Commons, we can wait and see. In the meantime Mr. Duncan Sandys, Minister of Supply, has announced that a statutory direction will be issued to the Iron and Steel Corporation that the Government must be consulted before further changes are made. The Government, he explained, must have an opportunity of judging whether proposed changes are likely to frustrate the intention of the Government. He promised that before a Bill was framed, the British Iron and Steel Federation, the Trades Union Congress, and steel consuming interests would be consulted. The intention is to set up a board on the lines of the Iron and Steel Board, representative of Government, management, labour and consumers. The standstill order will be welcomed by the managements of all the maritime industries. That the T.U.C. will fight on this issue seems unlikely, as the workers in the industry are by no means united in support of the Socialist nostrum. They have got on very well with their

employers, and the experience of the men in the industries already nationalised does not suggest to them that they would be better off under the State.

Businesslike Planning

BUSINESS MEN are realists and not theorists, and that is the difference between their planning and that carried on by official planners. As Mr. Basil Mavroleon remarked the other day, "shipowners are compelled to look many years ahead in planning development. A dynamic view and not a static one must be taken, if only because a new ship has to be ordered five or six years in advance." The owner has to study, with the aid of his experience, the signs of the times and all the probable lines of development in design and equipment, so as to be as sure as he can be that he will obtain the ship which will meet his needs by the time it is ready for sea. The official planner has a mass of statistics, but he lacks practical experience and he is subject inevitably to political pressure to adopt expedients which a practical business man would reject. The shipowner realises that he makes profits or goes into bankruptcy, but the official planner, particularly under a Socialistic regime, has no such fear. If he makes a mistake, the taxpayer pays the bill. That is the fundamental weakness of nationalisation, as the fine of £20,000 on the Central Electricity Board for irregularities in extending and equipping its new offices in Yorkshire illustrates. It is unfortunate that we cannot turn back the pages of history and free from State control, planning and administration such industries as the railways, coal, power and light. But steps must be taken to make their administration more flexible, ensuring that there is the minimum of regimentation. And, in any reform, provision should be made for the consumer to have a say, whereas today he is the gagged victim of monopoly.

The Demand for Ships

IT IS a relief to business men everywhere to feel that in the present Ministers of the Crown they are dealing with men with open minds who are not the slaves of any doctrine. Their aim is to use all the practical experience of managements and workers in the ordering of industry so as to get the best results without regard to any particular ideology. It is only by such methods that we can balance the national trading account, now so sadly out of adjustment. Events in the international field cannot be ignored. As Mr. J. W. Elliott has remarked, "the present position and the demand for ships is affected to a great extent by the uneasy state of the world, including the war in Korea. If the troubled state of the world becomes easier there will probably be a reduction in the demand for ships. We have to bear in mind also that shipbuilding is an international industry, and that Germany and Japan when they get into their stride will become severe competitors." Success is the reward of eternal vigilance and shipbuilders are fortunate in having the Shipbuilding Conference to advise them on the probable trend of events and shape policy so as to take the fullest advantage of them. We are entering on a critical period, owing to the increase in competition, and we shall have to work harder and possibly for longer hours if we are to avoid disaster. It is encouraging that the Trades Union Congress should have made it clear that it will cooperate with the new Government, seeking to promote national and not political interests. This body is the watch dog of the workers in industry and the less it has to do with party politics, the better for all whom it represents.

Shipbuilding in Japan

THE high cost of steel is one of the principal reasons for the difficulties Japanese shipbuilders are having in re-establishing an industry which is regarded as being vital to the nation's economy. In a recent issue of the *Mainichi*, the president of the Hitachi Shipbuilding & Engineering Company, Mr. Yosomatsu Matsubara, drew attention to this question. Raw materials for Japan's heavy industry, like those in Britain, have to be imported, and, owing to their scarcity and consequent high price, he estimated that the current production costs of Japanese shipbuilding were between 20 and 30 per cent higher than in Great Britain. This was hindering the ordering of ships in Japanese yards, despite the large number of inquiries they were receiving from all over the world. On the other hand, he claimed, Japan has the advantage in delivery times. Great Britain now has so many orders for new ships that delivery in most cases cannot be expected for about five years, while in Germany the period is now about three years. Despite this advantage, however, orders were not being placed in Japan because of the high cost of steel, according to Mr. Matsubara, but he did not make any reference to comparative wage costs or hours of work. The cost of steel, he said, was a matter of national concern, and he trusted that not only would the United States and other victorious nations be generous in their allocations of raw materials to Japan, but that the Japanese Government would "take a definite policy to establish the price of steel and iron." Shipbuilders in other countries will be anxious to know whether this is a sign that the Japanese Government is being pressed to subsidise steel for shipbuilding.

Transport Problems

ROAD, rail and air transport were represented in force at the anniversary luncheon of the Institute of Transport, at which most entertaining speeches were given by two distinguished guests, Vice-Admiral Earl Mountbatten of Burma and Lord Brabazon of Tara. It was disappointing to see how poorly the shipping industry was represented, apart from one or two well-known stalwart supporters of the Institute, including several former Ministers of Transport, Major-General Szlumper and Sir Gilmour Jenkins. Messages of regret for non-attendance were sent by Lord Leathers and Mr. John Maclay, who particularly emphasised his hope that he would be able to join in the future activities of the Institute. It is earnestly to be hoped that leaders of the British shipping industry will follow his lead, for the Institute of Transport has much to offer the industry and the industry has much to offer the Institute, which now has over 4,000 student and graduate members in a total of more than 9,000 members.

It's Safer by Sea

THE proper study of transport as a whole cannot be pursued without the study of ships and shipping; nor can the business of shipping be properly pursued without a full knowledge of the principles of every other form of transport. It might not be too much of an exaggeration to say that a great deal of the troubles experienced by ships in ports is due to lack of understanding between the various forms of transport which inevitably meet and have to work together in ports. Shipowners, in their own interests, should do more to encourage their staffs to join in the work of the Institute of Transport, and to follow the example of Mr. W. G. Weston, abstracts of whose paper read before the Institute appear on another page. The guests of the Institute at the luncheon, however, did not ignore the shipping industry. Earl Mountbatten referred to himself in his capacity as Fourth Sea Lord, responsible for Supplies and Transport, as "the managing director of one of the great shipping lines" the Royal Fleet Auxiliary of 68 vessels. Lord Brabazon drew comparisons between the safety of experiences of different forms of transport. Not one single fare-paying passenger in a British ship during 1950, he emphasised, lost his life in an accident. On the railways only three passengers were killed per thousand million passenger-miles. The comparable rate for passengers in motor transport was 12 and in the air as high as 62,

although the latter was a worldwide figure and much higher than the United Kingdom average. It was even more surprising, he said, that as many as 7,000 people a year were killed by accidents in their homes, and in any event, he concluded, he knew of no means whereby a man could leave this world alive.

The Saving of Scarce Materials

THE Anglo-American Council on Productivity represents one of the most imaginative developments for some years, and promises to lead not only to a better mutual understanding between the two countries concerned, but to a new attitude towards industry which will not perhaps have its maximum effect for some time to come. In the present difficult circumstances, there are few subjects more important than that dealt with in the most recent report, which concerns the saving of scarce materials, compiled after the visit of a specialist team to the United States in June and July. The conclusions are that the shortages of both ferrous and non-ferrous metals are matters of the utmost concern. It is noted that great progress has been made recently in America in the use of plain carbon steels containing small additions of boron, mainly for small section material. On the other hand, apparently the United States has something to learn from Britain in the economy of scarce alloying elements in the manufacture, for example, of jet aircraft engines. It is particularly interesting to note that both aluminium and magnesium show considerable prospects of rapid expansion and should replace some other scarce non-ferrous metals. The current shortage in supply of aluminium was estimated to be about 30 per cent, but this figure was regarded as being influenced by stock-piling, it being generally understood that aluminium would ultimately relieve the load on demands for copper. In one or two years it is expected that adequate supplies of light metals will be available, as steps are being taken both in the U.S.A. and Canada to increase electrical power resources for refining.

Alternative Policies for Steel

IN DEALING with shortage of supply of any material, all aspects of the matter must be carefully considered. For this reason it is not enough, in the case of steel, to say that a system of allocations between the many industries concerned will be applied. It is hoped that the importance of shipbuilding both to economy and defence will be recognised in deciding on the quota to be given to this industry and its allied activities during 1952. The other question to be decided is that of the quality of the steel to be manufactured for shipbuilding. Apart from the metals used in warship building and some large passenger ships, the material used in shipbuilding is predominantly mild steel, manufactured to give the physical properties recommended by the classification societies. During a severe shortage of steel, two courses of action are open. The first, already hinted at in the Press regarding steel for general industrial purposes, is the development of an austerity steel, with a general, though small, reduction in physical strength. Before too much work is done in this direction, however, every way of avoiding such a retrograde measure must be explored. In this connection, it may be recalled that in three barges of a new type built recently for the North Western Division of the Docks & Inland Waterways Executive, high-tensile steel was used in place of mild steel, and welding instead of riveting. The net effect was to increase the deadweight carrying capacity by 10 per cent; the cost was about the same, even though the better quality steel was dearer per ton, because of the smaller weight of steel used. In view of the fact that one of the limitations on steel production is shortage of scrap, it will be advisable to weigh the demands for scrap against those for alloying materials before further decisions are taken. Even before the war special steels were used in several large cargo ships with considerable saving in hull weight and in at least a few cases with great savings in hull maintenance costs following reduced corrosion. To use special steels of these types would economise in the amount of scrap required as well as give the owners more deadweight carrying capacity. If the alloying materials can be obtained, though this may be the difficulty, it would seem better to adopt this course than to introduce an austerity steel for shipbuilding.

East German Shipbuilding

FROM TIME to time, the authorities in East Germany make statements on their shipbuilding plans, but, so far, the laying down of the first keel has been postponed repeatedly. The limited capacity of the yards and the scarcity of materials have already imperilled the programme laid down for the repair of ships for the Soviet Union. At a recent meeting of the general shipping administration of the Eastern Zone in East Berlin, the results so far achieved by the yards were severely criticised. According to the latest official statements, a new building programme has been proposed, with four ship types to be designed and developed by the "Association of People's Shipyards," but it is doubtful if even the first keel can be laid down before the summer of next year. Of the four types proposed, one is a vessel of about 1,000 tons to be used exclusively for Baltic and North Sea trading, another is for trading as far as the Mediterranean, and a third for trading in the Eastern Mediterranean and Near East. Finally, the fourth type is designed to be suitable for trading with the Far East. It has been stated that the vessels for Far Eastern service will be fitted to accommodate about 12 passengers, and the earliest date mentioned for the first of these to come into service is the beginning of 1954. Meanwhile there appears to have been no decision made as to whether tankers should be built or chartered for trading with Persia.

A New Radar Scanner

THERE have been few changes in the design of scanners for marine radar from the "half cheese" type developed for Naval radar during the war. Until recently the most radical departure from this design was the "quarter cheese" used successfully by Decca Radar, Ltd., for their harbour radar. A more recent development has been reported from Canada, where an entirely new type of scanner has been produced by Canadian Arsenals, Ltd. This firm was entrusted towards the end of the war with the manufacture of the Admiralty Type 268 set, originally intended for coastal forces, which after the cessation of hostilities was used for the initial equipping of merchant ships. Canadian Arsenals is now building an improved version of this set for marine use, and in its search for a better scanner the company has evolved this new design. Briefly, the scanner consists of a straight length of rectangular waveguide, fed from one end, which has slots cut at regular intervals in one of the narrow walls. This waveguide is situated at the throat of a horn which extends for the full length of the waveguide. The whole is enclosed in a casing. The whole unit is very compact, requiring less frontal area than a parabolic scanner with the same main beam characteristics, while it is also claimed that secondary radiation (which may lead to false echoes) is greatly reduced. The model at present in production has an overall length of eight feet, and gives horizontal and vertical widths of 1.1 and 25 degrees respectively.

"WORLD SHIPBUILDING"

The third issue of *World Shipbuilding*, the international shipbuilding quarterly published by The Shipping World, Ltd., is now available. In addition to the regular features already established, this issue includes a special article on the Pescara free-piston engine, which is now being fitted in two French coasters; a survey of Swedish shipbuilding; and a description of the fully mechanised method of cargo handling now being employed in two cement carriers in Sweden.

ON THE "BALTIC"

BRITAIN'S DEPENDENCE ON COAL

By BALTRADER

COAL ought to have been imported into the United Kingdom in large quantities during the summer months. This is no fresh discovery, for everyone was aware of it at the time except those who were in possession of the most complete information. The Press contained innumerable comments on the advantage of building stocks before the cold season was upon us and before winter weather at sea and on the railways made transport of coal more difficult and expensive. It is now almost certain that we must begin in the winter to make good the deficiency which should have been dealt with months ago. Nothing, of course, could help us less to look the dollar in the face than to buy American coal instead of using our own plentiful supplies. Nor could any single factor help so much to put us on our feet as a recovery of and addition to our former coal production.

Increase in Home Coal Consumption

The increase of the country's own use of coal is an encouraging sign of the times, and long may it continue; the coal content of our manufactured exports is far more profitable than coal. The latter is none the less an essential part of the *quid pro quo* which we must be able to offer if the imported necessities of life are to continue. In order to relieve the strain on the power stations, industry is being asked to generate its own electricity, using fuel oil. In existing circumstances, that is no doubt a practical step, but any addition to our reliance on imported fuel, whether coal or oil, is economically and strategically to our detriment. It is coal of our own, the best in the world, in overflowing plenty, which we need, enough to satisfy the utmost requirements of factory, power station and hearth and to supply every one of our now disappointed foreign customers. That would turn the fortunes of Great Britain as once was accomplished under the impetus of Lloyd George's Ministry of Munitions, as those who were in the trenches still remember with gratitude. The paradox is that this small island is said to be in danger of failing to support its large population; at the same time it is unable to cope with the abundance of foreign orders and an accumulation of home requirements, on account of the shortage of manpower. This is certainly true in the case of coal production, which is the pivot on which all manufacture revolves.

The Problem of Manpower

It is becoming more and more difficult to recruit young men to the mines to make good the normal wastage. It does not become us others who work hard, but in comfortable conditions, to criticise those who decide to accept more pleasant work than mining. There are other industries which offer good pay, although generally less than coal mining; they are in need of more manpower and they are of the greatest importance in the export drive; but they will not be able to maintain full production if the supply of power is cut down. Many years ago, large numbers of foreign miners were brought to Scotland; they gave invaluable service to the country and became a respected element in the community. If more of our men want to work in other industries than coal mining, the solution is to find other men who are able and willing to take their place; there are enough and to spare in Europe, especially in Italy. The late Government was quite alive to this, and so were the trade union leaders, but resistance on the part of the majority of miners has reduced almost to a farce the attempt to make good our shortage by the recruitment of foreign labour. It should not be beyond human wit to devise a plan which will exorcise the doubts and fears of the miners, derived from past experience of unemployed misery.

Freight markets on the whole are quieter, with comparatively little inquiry for grain ships for account of the Ministry of Food. The Baltic Chartering Committee has almost succeeded in its prolonged effort to secure tonnage at 120s. for bulk wheat to the United Kingdom from full range Australia; finally 122s. 6d. has been accepted. The Plate market, so long depressed, is the most buoyant of all for the moment, on account of the sale of a number of cargoes to Scandinavia and the near Continent. To meet the demand, there is only a handful of ships available; owners of these are, therefore, showing considerable reserve.

The Freight Market

The most interesting development of the past week is the commencement of chartering for coal from the United States to the United Kingdom. The *Zini*, 9,000 tons, is fixed from Philadelphia, Baltimore or Hampton Roads to West Coast U.K., option East Coast between Middlesbrough and London, option Antwerp, Rotterdam or Amsterdam at sterling equivalent of N.S.A. rates, January 5-25. The N.S.A. rate to U.K. is at present equivalent to 77s. 6d., but it is expected that it will be amended to about 82s. 6d. Other fixtures for coal from the United States include Hampton Roads to Japan $22, December and to Antwerp or Rotterdam $10.50, Warshipvoy charters with nominal despatch, late November. A vessel is fixed from Baltimore to Chittagong, coal at 200s., November/December. Grain chartering from North America has been mainly for the supply of India. *Jersey City*, January/February and *Cornish City*, February, are fixed from Gulf to West Coast India at 195s., heavy grain. Vesseis have been taken for heavy grain from British Columbia to East Coast India at 170s., option West Coast India, 180s. February/March and March. Rates from the River Plate have risen sharply. The *Exedene*, 8,200 tons, 10 per cent, 68 ft. guaranteed, fixed from up and down River, option Bahia Blanca to Antwerp-Hamburg range at 97s. 6d., option U.K. 102s. 6d., option Sweden, Gothenburg-Malmo range, or Denmark inside the Skaw, 117s. 6d., January 1/31. Charterers continue to quote time charter for short and long periods. Fixtures include Bank Line motor vessel, 8,876 d.w., 485,000 ft. bale, 10½ knots on 10½ tons, 66s. 6d., delivery London, a trip to Malaya, December 10/27 December, and *Starstone*, 9,965 d.w., 530,000 ft. bale, 9½ knots on 21 tons oil, 52s. 6d., one South American round, delivery U.K. or Continent, Antwerp-Hamburg range, December 1/15.

Air Charter Business

Air freight chartering has been quiet in the past week, but Christmas traffic is expected to account for incoming business. Brokers report that there is a large amount of cargo to be shipped by air to South and East Africa. The event of last week was the meeting in Paris of delegates to the International Air Brokers' Association from a dozen European countries. The object of the conference was to discuss further steps to increase value and authority of the airbroking profession throughout the world.

A GRAIN ELEVATOR, claimed to be the largest in the world, has been opened in the new port of Buenos Aires. The elevator has a capacity of 150,000 tons, bringing the total storage capacity of elevators and warehouses under the control of the National Grain and Elevator Board to 1,900,000 tons.

MARINE TRANSPORT OF OIL IN BULK*

By W. G. WESTON, C.M.G.

General Manager, Marine Department, Anglo-Saxon Petroleum Co., Ltd.

THE vertical structure of the oil industry, mainly in organisations each concerned with the oil business from the stages of exploration and production right through to the ultimate consumer, requires that the provision of sea transport for each such organisation be the responsibility of concerns associated in greater or less degree with that organisation. Thus, practically the whole responsibility for transport of oil in bulk is centred in the hands of a comparatively small number of marine concerns attached to the oil companies, each responsible over a worldwide field of operations.

How do these great organisations provide themselves with the tonnage they require? Part of their tonnage is owned and managed by these marine associates of the oil companies themselves. At present about 43 per cent of the world total tanker tonnage is owned and managed in this way. For the rest, excluding Governments, there are what are usually called "independent" tanker owners, that is, shipowners who own and/or manage tankers available for worldwide trade, exactly as do, say, dry-cargo tramp shipowners. Tankers of these tramp owners are made available for transport of oil through the marine concerns of the oil companies through forms familiar to the shipping industry at large, that is, by the time or period charter and on consecutive or single voyage charters.

Changes of Policy in Ownership

The generally accepted practice before the war as regards the proportions of tonnage under these various heads was around 65 per cent of total requirements owned and managed, plus 25 per cent on period charter, plus 10 per cent to be covered "spot" or for the short term on the market. The growth in the volume of business has involved some considerable change in policy in these respects. It is important to remember in all shipping operations that policy is decisively affected, not by percentages or proportions, but by numbers of units concerned. This vital consideration has, on the one hand, tended to reduce the percentage of tonnage owned and managed. The position varies at present from company to company, but my suggestion is that policy will settle down ultimately to around 55 per cent of requirements as we know and foresee them today. At the other end of the scale, 10 per cent to be covered "spot" or short is too large a number of tankers to be handled in this way. I suggest it will be found that normal and prudent practice for the future will leave not more than about 5 per cent of the total world requirement as now envisaged to be covered in this way. Within this total of 5 per cent overall, practice will vary and the bigger the scale of operations the lower will be the percentage of spot market operations left to be covered by particular operators.

If my suggestions are right as to the two ends of the scale, there is left a proportion of up to say 40 per cent of the total tonnage required to be covered in other ways. For the time being, the traditional method of time and period chartering under various guises holds the field, but it is probable that for a proportion of these large requirements, entirely new concepts will have to be developed, related in some way to the problems of finance and management which underlie all these changes.

Partnership with Independent Owners

One interesting development in this field has been opened up by one of the major British charterers in building a group of ships in partnership with existing independent tanker owners, together with other financial interests, the independent owners providing the management required. Whether this is a reasonable or sound answer to all the problems is a matter of judgment and speculation, but at any rate it is noteworthy as a recognition of the facts of the case, for in this particular context the growing number of operating units required poses questions of finance and management of a major order.

In the sphere of ship management, in the sense in which I am using the word now, methods have to be found of devolving responsibility if efficiency is not to be lost with growing numbers, while at the same time preserving the aegis of general policy which must overhang the management of any great groups of ships. The independent owner with his smaller group of ships, numerous though some of these groups are now becoming, is part of the conventional solution of this management problem, and is capable of extension insofar as financial and commercial considerations may permit. The tonnage under the control of each tanker operating concern has for many years included, and will continue to include, a large number of ships on period charter, and therefore at its operating disposal as completely as owned tonnage, but in respect of which the bulk, though not all, of the management functions are carried by the independent owner. In particular, the function of providing efficient staff and crew in such cases rests on the independent owner. Only in the case of the marginally-chartered spot or short term tonnage does the operating company escape entirely from ship managerial responsibilities, but practical and commercial considerations limit the number of ships which any one concern is likely to wish to retain on such a basis.

One fundamental matter which is within the responsibility of tanker management but vitally affects tanker operations, is how to improve the days in service or working time that can be got out of British ships. Here we are all afflicted by slower repair times, shortage of materials and accumulation of maintenance and survey work resulting from the war. One of the contributory factors to the shortage of tonnage is that we can count, with the best will in the world and the most energetic supervision, on considerably less working days per ship per annum than before the war. The standard practice in my company before the war was to calculate on 340 days. Nowadays we calculate on 315 when we are pessimistic and not more than 320 in our most optimistic moods. On the world's requirements of ocean tanker tonnage, this loss of 20 days per year represents about 100 tankers. Here is a field in which energetic management has great opportunities, but it must be admitted that progress is very slow. My company's experience in 1948 gave us an average of 310 working days per ship. Our experience this year gives us nearly 320. Tanker managers are now threatened with recrudescence of delaying factors, including pressure on the yards and shortage of materials.

Deadfreight and Ballast Voyage

In the field of tanker operation, as in all forms of shipping, the aim is to load, carry and discharge the maximum amount of cargo with the minimum amount of tonnage and at the least expense. The first devil which plagues all ship operators, but is of even larger and more ferocious aspect in the tanker world, is the devil of deadfreight and the ballast voyage.

With so limited opportunities for saving long ballast voyages, it will be clear that only coordination on a wide scale can secure their utilisation to the full. A considerable saving in the total amount of tanker tonnage required to move the world's oil on an economic basis is achieved by coordination between the major operators on the basis of standard chartering agreements under which a ship in a favourable position for another's trade may very well be offered on terms which provide for the replacement of their service elsewhere or at some other time. These observations suggest the principle, comparing them with our comments as regards ship management, that while the latter requires the development of methods of devolving responsibility, on the operating side the advance must be towards wider and wider spheres of integration.

Apart from the question of economic routeing, efficient tanker operation is largely, as in most other forms of shipping, a question of speed of turnround. The value of ship's time has multiplied since before the war. This is not only a question of the increasing capital and operating costs of individual units. The daily basic cost of a T2 is nowadays around £700. At the Pernis terminals in Rotterdam, for example, where tankers arrive at the rate of 30 T2s per month, the loss of only one day per tanker would cost £250,000 per annum. This is not the true story, however, for the loss of time must actually be measured in terms of replacement cost. Taking the same example, the loss of time by the tankers concerned would represent 12 round voyages Caribbean/U.K. per year, which on the average market rates obtaining over the last year would cost £800,000 to replace.

The probability of lost time increases, of course, with the

* Abstract of a paper read before the Institute of Transport on November 19, 1951.

growing volume of traffic. The loss of time awaiting berths is the greatest single cause of delay in port. Here we come up against the operator's familiar bogies of "bunching" and "slip." Bunching means that state of affairs in which a series of ships programmed and ordered to arrive at properly timed intervals, in order to make full use of the berths available, in fact all arrive together, with loss of time to some of them while they await berths. Slip is that mysterious phenomenon which afflicts the operator and provides the explanation for bunching, late arrivals, failure to maintain offtake and all the other things for which operators get criticised. This slip is the accumulation of minor and unexpected troubles afflicting ships loading, sailing over long ocean voyages and discharging. With the best will in the world, the highest degree of maintenance, manned by the finest personnel, directed by the most efficient management, ordered, cajoled, watched, checked, praised, criticised, nevertheless these ships do not manage quite to berth as estimated, and cumulatively involve operators in a substantial amount of slip.

One of the ways in which this problem of turnround time is being seriously tackled is by stepping up the rates at which cargo can be discharged from tankers or loaded into them. Before the war, the average pumping capacity of a 12,000-tons ship was of the order of 200 tons of oil per hour. The T2 tanker improved considerably on this, to pumping rates of around 700 tons per hour. Ships of the general purpose trading class are now expected to pump at about 1,200 oil tons per hour while, of course, the big crude carriers have pumping rates of 1,500/2,000 oil tons an hour. This means, as well as the improvement in the ship's equipment, considerable expenditure on the lines and reception facilities ashore. From the shore side there has likewise been a general increase, with loading speeds up to about 1,500 oil tons an hour for products and 3,000 oil tons an hour for crude oil in the main loading areas.

Size and Speed Problem

In this sphere of efficiency of operation we come up against the familiar problem of size and speed of tanker units. There are obvious advantages in carrying oil in large units, since the capital and operating costs do not increase commensurately with the volume of oil carried. However, limits on the size of tankers are imposed by the facilities available for their loading, discharging and navigation. So great are the advantages of size, that in course of time every effort will be made to adjust the loading and discharging facilities and their siting to enable the biggest practicable units to be used; but there is a time lag and also there are physical disabilities which cannot all be overcome by the indefinite expansion of depths of water, widths of channel, lengths of berths, docks, etc., necessary for the large tanker.

The great development of the "super" tanker is related to crude carrying, where some of the disadvantages of necessary shuttling, because of the nature of the cargo, can be overcome by the economies of size; and on such a limited number of routes expansion of terminal facilities is a practical proposition. There will still remain a wide range of tanker operations which have to be made by tankers of smaller size, of dimensions giving them the widest possible range of utility. The ships best liked by the operator are those which can be fitted into as many as possible of the trades that have to be catered for, so that switching, deviations and other adjustments to meet day by day fluctuations are made simpler. The T2, of 16,000 tons at a little over 14 knots in service, is for the time being the most effective unit for worldwide trading, compared with the prewar 12,000-tonner. Ships are now building up to 18,000 tons deadweight on dimensions which will give even more effective range of utility than the T2.

As regards speed, the sailor is apt to stress the great advantages of an extra turn of speed. Technical and commercial considerations set severe limits to the gain, however, in that capital cost and weight of the machinery to get the extra power, modifications in the design of the ship, and the effect on fuel consumption together tend to raise the cost of operation and to reduce the amount of cargo carried so that beyond a certain point growing speed involves a loss rather than a gain. The point at which this happens is largely a technical question of design of hull and power of machinery. We have gone a long way in stepping up the average speed of tankers from the 10 or 11 knots common before the war. Most ships in the 16/18,000 tons class now building will be capable of service speeds of 14 knots or over, while the turbine super tankers are in the 16/17 knot class. Some ships building will give even better performances.

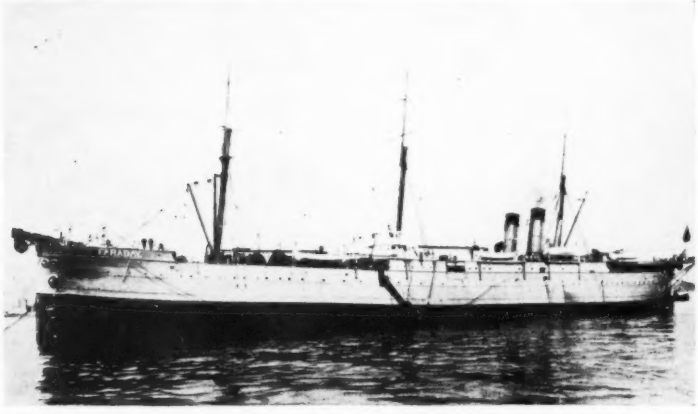
Higher Service Speeds

There is, of course, a direct connection between the size of the ship and the speed at which it can economically be propelled, and the search for more and more carrying capacity within the dimensions imposed by facilities, and advances in design and performance of machinery, will undoubtedly in the future make practicable service speeds even higher than those now contemplated.

Meanwhile, in planning the composition of a fleet as regards size and type, account has to be taken not only of possible improvements in design and performance of tankers, but also, the capacities of existing terminal facilities, and the prospects of their modification in the future. The oil industry has enormous capital invested in sites and facilities appropriate to tankers of size and dimensions deemed practicable when they were designed and built.

Ideas on size and speed of tankers have undergone a revolution in the last few years. New developments in the oil industry can take account of these ideas, and perhaps also cater for further phases of development. A considerable amount of improvement and modification of existing terminal and shore facilities is in progress and will be continued. But for many years to come the tanker operator will have to cope with port facilities in many parts of the world, which either on account of insurmountable physical restrictions, or for other commercial and financial reasons, are not adjustable to match fully the current potentialities of ship designers and builders. Thus we must expect to see tanker fleets constituted for some time to come more or less on the lines of present classes existing and building, though efforts will doubtless continue to be made, in the search for greater economies still of size and speed, to

(*Continued on page* 367)



Historic Old Cable Ship

Reference to the old cable ship *Faraday*, which is now being scrapped at Newport, Mon., was made on page 319 of THE SHIPPING WORLD of November 7th. This vessel, of distinctive appearance, was launched on the Tyne 76 years ago. Of about 5,000 tons, she had a length of 360 ft. and was built for Siemens Brothers & Co., Ltd. During her active career she laid over 50,000 miles of submarine cables, including eight cables across the Atlantic. She was partly reconstructed in 1909, and continued in service until 1923, when she was replaced by a vessel of the same name. Until recently she was acting as a coal station in Algiers

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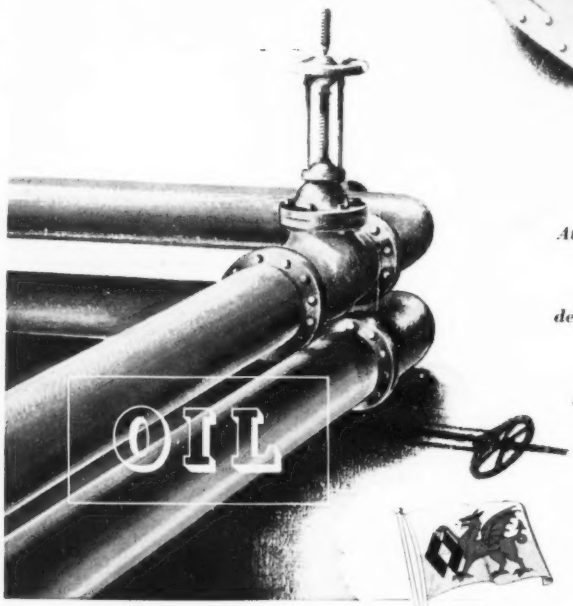

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COAL AND OIL

COAL IMPORTS FROM AMERICA

THE CIRCULATION on the Baltic Exchange of inquiries for tonnage to bring coal to this country from United States shows that the new Government has not taken long to make up its mind as to the need for such imports. According to the *Financial Times*, the quantity which it is desired to import is believed to amount to 750,000 tons, which compares with the 1.2 million tons imported during last winter. Since last winter the situation in respect of U.S. coal exports has changed, as the allocation system has been reintroduced, primarily in order to avoid congestion at Hampton Roads. A secondary effect of this system, coupled with the withdrawals of ships from the U.S. reserve fleet which have been taking place, is likely to be the avoidance of the tremendous pressure of demand for shipping space which was a feature of tramp ship operation last winter. There can be little doubt, however, that freights will remain high. It is understood that O.E.E.C. has allocated 75,000 tons for shipment to Great Britain in December, and 335,000 tons in January and February. If the figure of 750,000 tons is correct, this will leave a further 340,000 tons to be imported in March and April.

Turnround of Coastal Colliers

THE SLOW turnround of colliers in the Thames due to the time they have to wait before they get into the unloading berths was criticised by Mr. E. C. Haslam, chairman of the North of England Shipowners' Association, at the annual dinner at Newcastle. One of the problems facing the shipping industry was how long private collier owners could continue in the coastal trade. The prosperity of the foreign trades did not apply to the colliery trades. The system of fixed freights controlled by the Ministry regardless of the laws of supply and demand spelt the eventual doom of the private collier owner. Mr. Haslam said that the Coal Board wanted more shipping tonnage for its output and could not get it, but what was worse was that the shipping available was being wasted. There would be no talk of a fuel crisis in London if ships were discharged in one day as they used to be, instead of taking three or four days as at present. Colliers could be loaded twice weekly instead of only once. Mr. Haslam explained later his reference to slow unloading on the Thames. He said he was not complaining about the actual time taken for unloading, but about the time ships had to wait before they could get to discharging berths. There should be more diversion to less busy discharging points. In the course of his speech, Mr. D. F. Anderson, chairman of the Shipping Federation, said that shipowners would like to see more competition among people supplying fuel, whether coal or oil. At present some of them were basking in a period of over demand and under supply.

Australian Coal Troubles

AUSTRALIA is another country where difficulties of coal production have killed a flourishing export market, and are now causing internal troubles as well. A survey of the coal industry has recently been carried out by the Australian Research Service. The New South Wales coalfields were established early in the history of the country, and in 1900 they were able to supply 87 per cent of the Australian internal demand for coal and make available some 2,000,000 tons for export. The New South Wales export trade was still flourishing in 1930, but since then the irregularity of supplies and industrial disturbances have reduced it almost to nothing. In internal trade, New South Wales coal still provides the largest part of Australian consumption (some 70 per cent), but this proportion is declining steadily. By 1944, every State in the Commonwealth had made an attempt to become independent of New South Wales coal, by opening up their own mines, importing coal, or using coal substitutes. It is calculated that by 1954 these measures will result in the other Australian States requiring less New South Wales coal than they did in 1950, despite the general increase in coal demand. "This," the report states, "is a confirmation of the theory that basic commodities chronically scarce tend to cut out their own markets."

Shorter Items

THE REPORT of the Fuel Research Board for the years 1946 to 1949 has been published by H.M. Stationery Office (*Fuel Research, 1946 to 1949*). The last report of the Fuel Research Board, which is a part of the Department of Scientific and Industrial Research, was for the period 1939/46 and was concerned largely with the wartime activities of the Fuel Research Station. The present report deals largely with the transition from short-term wartime researches to postwar reconstruction projects.

THE Burmah Oil Company and the Shell group, the two partners in Burmah-Shell India, are considering the erection of a refinery at Bombay, and at the request of the Government of India a party has left London to discuss the proposal in Delhi. The Standard-Vacuum Oil Company and the Caltex group were also asked to consider the erection of refineries in India, and it has been reported that the former company is already engaged in negotiations over the erection of a refinery at Bombay.

OFFICIAL NOTICES

Change of Name

GUERET, IMOSSI, LTD., coaling and fuelling contractors, etc., 57 Bute Street, Cardiff. Name changed to Cory Bros. & Co. (Gibraltar), Ltd., on October 31.

Increase of Capital

HECTOR WHALING LTD., 42 Upper Grosvenor Street, London, W.1. Increased by £675,000, in 5s. ordinary shares, beyond the registered capital of £1,125,000.

Royal Dutch Shell Group

For reasons of health Mr. B. Th. W. van Hasselt is to resign as director-general of the Royal Dutch Petroleum Company at the end of the year. He has also tendered his resignation as a managing director of the Royal Dutch/Shell Group operating companies. Mr. L. Schepers has been appointed a managing director of the Anglo-Saxon Petroleum Co., Ltd., and of N.V. de Bataafsche Petroleum Maatschappij, with effect on January 1. At the next meeting of shareholders of the Royal Dutch Petroleum Company, Mr. B. Th. W. van Hasselt will be proposed as a director and Mr. Schepers as a managing director of that company.

New Gravity Davit

It has been announced by J. Stone & Co. (Charlton), Ltd., that the firm has acquired an exclusive licence, from the Marepa Trust, Ltd., of Liverpool, for the sale and manufacturing rights of the "Marepa" type gravity davit for ships' lifeboats. The principal features of the "Stone-Marepa" davit are: (a) it is light in weight, and of good structural design which requires little stiffening; (b) simple linkages give the arm a floating action without the use of either rollers or trackway, or a complicated reeving of the falls; (c) it is simple and smooth in operation and easy to maintain; (d) it is fully approved by the Ministry of Transport. The davits are supplied with electric or hand power winches fitted with grooved drums, centrifugal brake and deadweight operated handbrake. Inquiries should be addressed to Oceanic House, Cockspur Street, London, S.W.1.

OF THE 31 ships in the Pakistan fleet, 29 are fitted or being fitted with Marconi radio and navigational equipment.

Potential World Tonnage

On completion of the 15,300,000 tons deadweight of ocean-going merchant shipping now under construction or on order throughout the major shipbuilding nations, the world's ocean-going merchant marine will total 102,500,000 tons deadweight, excluding U.S. Government-owned tonnage (except active Government passenger vessels under charter). According to the National Federation of American Shipping, this will be 29.4 per cent greater than the comparable fleet immediately before the outbreak of the Second World War and almost 18 per cent larger than the mid-1951 level. It is pointed out that construction for U.S.-flag registry consisted of only 2.8 per cent of the world's total production, compared with an existing privately-owned fleet of 18 per cent of the world's total. Marshall Plan countries, in contrast, are building tonnage representing 71.3 per cent of total vessel construction, although their fleets represent only 37 per cent of the total world fleet. This analysis, of course, makes no allowance for wastage through obsolescence, casualties and so on.

MERCHANT FLEETS OF THE WORLD, 1939-1951
(Deadweight Tons in Thousands)

Country	September, 1939	July, 1951	Building and On Order	Potential Future Size	Increase (Decrease) from 1939 (per cent)
World total	79,231	87,169	15,330	102,499	29.4
U.S. private	10,312	15,605	429	16,034	55.5
Western Europe	46,499	49,771	10,925	60,696	30.5
Belgium	494	600	—	600	21.5
Denmark	1,575	1,746	412	2,158	37.0
Eire	—	54	32	86	—
France	2,998	3,826	750	4,576	52.6
Greece	2,791	1,822	240	2,062	(26.1)
Iceland	—	36	2	38	—
Italy	3,910	3,747	293	4,040	3.3
Netherlands	3,424	3,773	307	4,080	19.0
Norway	6,931	8,021	2,618	10,639	53.5
Portugal	263	512	53	565	114.8
Sweden	2,033	2,844	931	3,775	85.6
Switzerland	—	112	47	159	—
Turkey	223	524	—	524	135.0
United Kingdom	21,857	22,154	5,240	27,394	25.3
Canada	316	875	76	951	201.0
Panama	1,105	5,306	611	5,917	435.0
Spain	1,051	1,296	120	1,416	34.7
U.S.S.R.	1,597	1,898	50	1,948	22.0
Japan	7,145	2,529	649	3,178	(55.5)
Germany	5,177	1,004	554	1,558	(70.0)
Others	6,020	8,885	1,916	10,801	79.2
Total except United States	68,919	71,564	14,001	86,465	25.5

Ships Laid Up in U.K. Ports

The quarterly statement issued by the Chamber of Shipping of the number and gross tonnage of ships laid up at ports in Great Britain and Ireland on October 1, 1951, is given below, together with the figures for previous quarters. The further table shows the number and gross tonnage of those ships which were awaiting or undergoing repair. It will

(*Continued in next column*)

RECENT SHIP SALES

Westralian Farmers Transport Co., Ltd., London, has recently purchased five cargo vessels; the motor vessels *Caithness* (4,970 t.g.) and *Peebles* (4,982 t.g.) from B. J. Sutherland & Co., Ltd., Newcastle-on-Tyne; the steamer *Danelmia* (5,282 t.g.) from the Metcalfe Shipping Co., Ltd., West Hartlepool; the motor vessel *Stankeld* (4,956 t.g.) from J. A. Billmeir & Co., Ltd., London; and the motor vessel *Queen Adelaide* (4,933 t.g.) from Thos. Dunlop & Co., Glasgow. The *Caithness*, built in 1935, realised £475,000, and has been renamed *Swanvalley;* the *Peebles*, built 1936, realised £425,000 and will be renamed *Swanstream;* the *Danelmia*, built 1929, realised £287,000 and has been renamed *Swanriver;* the *Stankeld*, built 1937, realised £430,000, as did the *Queen Adelaide*, built 1926. The last two vessels are to be renamed *Swanbrook* and *Swanhill* respectively.

Formerly a steam trawler, the Norwegian cargo steamer *Morna* (312 t.g.), about 400 tons d.w., owned by the D/S A/S Anglo, of Haugesund, has been sold to Belgian buyers. Built in 1912 by Cook, Welton & Gemmell, Ltd., Beverley, she is understood to have a speed of about 9 knots, her engines having been built by Amos & Smith, Ltd., Hull.

Norwegian cargo steamer *Ole Bratt* (1,186 t.g.), owned at Bergen by Sigbiorn Birkeland, and built at Wesermunde in 1921 as the *Gerda*, later being named *Mitra*, has been sold to German buyers for about £70,000. With a speed of about 8 knots and new engines fitted in 1941 by Sarpsborg Mek. Verkstad, she can carry about 1,700 d.w.

(*Continued from preceding column*)

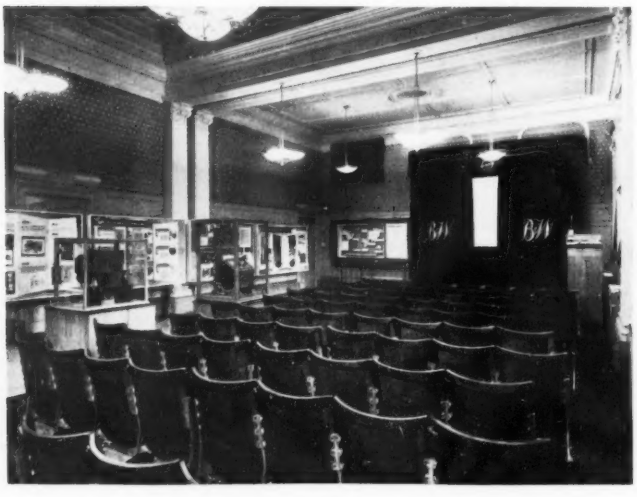
be observed that the bulk of the laid-up tonnage again consisted of vessels awaiting or undergoing repair; that the figure for British tonnage, 429,582 tons gross, shows a small increase over the figure for the previous quarter, which was the lowest quarterly figure since collection of these statistics was resumed in 1946. The British tonnage laid up for reasons other than repair has fallen to 43,904 tons gross.

TOTAL LAID-UP

	British Vessels		Foreign Vessels		Total	
	No.	Tons Gross	No.	Tons Gross	No.	Tons Gross
Oct., 1950	156	639,163	8	51,084	164	690,247
Jan., 1951	144	685,344	9	39,927	153	725,271
Apr., 1951	149	610,574	14	34,180	163	644,754
July, 1951	97	362,879	18	55,364	115	418,243
Oct., 1951	115	429,582	14	39,497	129	469,079

VESSELS AWAITING OR UNDERGOING REPAIR

	British Vessels		Foreign Vessels		Total	
	No.	Tons Gross	No.	Tons Gross	No.	Tons Gross
Oct., 1950	116	516,438	6	50,122	122	566,560
Jan., 1951	108	603,319	6	30,857	114	634,176
Apr., 1951	120	554,078	13	33,534	133	587,612
July, 1951	82	313,969	15	49,848	97	363,817
Oct., 1951	88	385,678	12	38,512	100	424,190



Babcock & Wilcox Exhibition Hall and Cinema

A private exhibition hall and cinema has been opened by Babcock & Wilcox, Ltd., at Salisbury Square House, Salisbury Square, London, E.C.4. It is intended to serve as a central London "shop window" for the extensive range of steam-raising equipment which the company manufactures. The display will be changed from time to time to cover the different aspects of the work of the Babcock & Wilcox organisation, the hall being available for use by the company's subsidiaries. The hall is fully equipped for the showing of 16 mm. films, comfortable seating being provided for an audience of up to 80 people. The main hall is 60 ft. by 30 ft. and is equipped with a sound-proofed projection box from which the whole of the hall lighting, dimming arrangements, curtains operation, etc., are controlled. The opening display includes models of modern Babcock power station and marine boilers and an exhibition sequence illustrating and describing the major part played by the company in the development of the watertube boiler. Other exhibits of the display illustrate current production and research at the company's Renfrew works

SWEDISH SHIPPING AND SHIPBUILDING

STORY OF THE SWEDISH ORIENT LINE

By THE SHIPPING WORLD'S Own Correspondent

On the occasion of its 40th anniversary, the Swedish Orient Line has published a survey of the development of the company through the years in its quarterly review. The founder of the company was the well known Swedish shipping man, Mr. Dan Broström. He started to investigate the possibilities of a regular Swedish shipping service between Sweden and the Levant as early as 1907 and it was finally decided to start the service in 1911. The steamship *Upland*, of 3,400 tons, was the first vessel of the Svenska Levant Linien, as the line was then named. By transferring eight older vessels the Broström concern secured shares in the new company. The profit was small and soon it was all too evident that the vessels were not suitable for the trade. With the funds exhausted the company had to go into liquidation in 1927. When a new start was made again, the line could rely on the widespread network of agencies Mr. Eugen Eugenides had established for timber export in the Levantine countries. It was also obvious, however, that a fleet of more modern vessels was needed for this purpose. The company was still confronted with great difficulties and the depression of the early 1930s did not make things better.

After the war sailings were resumed on the old routes and further new services were started between South America and the Mediterranean, and between North America and South America in cooperation with the Brodin Lines, of Stockholm, as well as between Poland and the east coast of Sweden and between Italy and Egypt and other countries in the Near East. Through the newly founded A/B Atlanttrafik, with three vessels from Oceankompaniet and three from Trelleborgs Angfartygs A/B, all of them completely refrigerated, a worldwide transport service for frozen meat and fruit was started. With the foundation of the daughter company, A/B Coasting, a special feeder service with three coasters in the Baltic and along the Swedish coast has been established.

The Fleet Today

Svenska Orientlinjen today has 33 vessels, aggregating 125,000 tons, at its disposal. The total cubic capacity of this fleet is 7,600,000 cu. ft. bale, of which 1,900,000 cu. ft. is refrigerated. Last year the company transported 745,000 tons of goods, as against 150,000 tons twenty years ago. About twenty of the SOL-vessels have been built by Eriksbergs Mek. Verkstads A/B, at Gothenburg, which yard also has undertaken to deliver three motor vessels of about 6,000 tons each during 1952-53, besides two refrigerated vessels of the *Ocean* type, of 4,500 tons each. The yard has received many constructive ideas from the Orient Line, such as the use of deck cranes, mechanical hold ventilation and so on. In the vessels of the *Vingaland* type the problem of crew accommodation has been approached from a new angle.

As future manager for the Swedish Orient Line, to succeed Admiral Erik Wetter, who has been appointed Master of the Royal Household, Mr. William Thorén is mentioned. Mr. Thorén started his career at an early age with the Broström concern and later he was made chief clerk for Svenska Orientlinjen, in the service of which he has also acted as manager at different periods during recent years.

At the end of this year work on the largest building berth on the Swedish east coast will be completed for the Oskarshamn yard. With a length of 465 ft., this berth may be used for the construction of vessels up to 16,000 tons. A new passenger vessel for the Stockholm-Abo route is at the moment building on the berth. The Eriksberg yard has been authorised to build a sawmill near Oskarshamn and the erection of the new building was started recently. The annual capacity of the new sawmill is estimated to be about 300,000 cu. ft. of sawn goods, which in the first place will go to the yard at Gothenburg for fitting out new vessels.

The new icebreaker *Thule*, launched on October 12 at the naval shipyard at Karlskrona, will have a displacement of 1,930 tons. The *Thule* is all-welded and she has an overall length of 205.1 ft., beam 50 ft. and draught 15.11 ft. The diesel-electric machinery develops 4,800 h.p. It is possible to manœuvre the engine direct from the bridge as well as aft. When caught in ice, special trimming tanks are arranged to enable the icebreaker to work herself free. This Government icebreaker is manned by the Royal Navy and is designed to operate in the Sound between Denmark and Sweden.

The Board of Trade has asked for an approval of last year's proposal for an extension of local icebreaking and the sum set aside for the reconversion of the tug *Trollhätte Kanal*. It is also suggested that a preliminary proposal should be submitted to the Riksdag in 1952 for the building of two auxiliary icebreakers. The Board of Trade is of the opinon that the Government's icebreaker *Ymer*, which will be 25 years old in 1958, needs urgent replacement. The cost of one icebreaker is estimated at Kr.30 million. The funds required for icebreaking equipment during the period 1952-53 to 1961-62 will reach a total of Kr.64 million.

The license granted to the Norrbotten steelworks by the Board of Trade for the transport of limestone from Gotland to Lulea in Finnish and German vessels was recently extended also to cover the Norwegian steamer *Tom Strömer*. For the first time the Republic of Indonesia has bought a vessel in Sweden, namely, the motor tanker *Tjepoe* (1,200 tons; built in Sweden, 1949) from Rederi A/B Saturnus, Stockholm.

Trade with Western Germany is showing a strong upward trend and it is significant that Hallandsbolaget, the oldest shipping company in Sweden, has increased the regular sailings to two services weekly in both directions between Malmö and Lübeck. The port of Lübeck, which was not so heavily bombed as other German ports during the war, is well equipped and is giving splendid service. With the introduction of the fast *Marstrandsfjord*, of 157 tons net, between Copenhagen and Malmö it will be possible to make the crossing in less than an hour. The vessel, which is built at the Hamburg-Finkenwerder yard, has a speed of about 20 knots and accommodation for 270 passengers.

International Cargo Handling Coordination Association

The next meeting of the executive committee of the International Cargo Handling Coordination Association (the designation Association having been substituted for Committee) will be held in Paris on November 30. Messrs. Peat, Marwick, Mitchell & Co., chartered accountants with offices in the principal capitals of Europe, have agreed to act as secretaries, to collect and administer funds, and to draft the charter of the Association. The president of the provisional executive committee is Rear-Admiral Mark Wardlaw, and the chairman is Mr. A. C. Hardy. Col. R. T. Hartmann, of Industrial Truck Developments, Ltd., heads the British delegation, Admiral Jean Dieudonne, chairman of the French Shipbuilding Research Association, the French delegation, and Professor R. Immer the United States delegation. Other members of the provisional committee are Mr. C. P. Backx, of Thomsen's Havenbedrijf, Antwerp; Mr. H. C. Steffenson, Elsinore shipyard; M. Xavier le Bourgeois, French Ministry of Merchant Marine; M. Vincenti, French Union of Stevedores; Dr. J. Ph. Backx, vice-president, Rotterdam Port Employers' Association; Dr. L. Accame, Genoa Chamber of Commerce; Mr. T. Svennberg, Transport Research Commission of the Swedish Academy of Engineering Science; and Mr. Donald Smith, A. E. Smith-Coggins, Ltd., Liverpool.

ROUND THE SHIPYARDS

Work in Progress on the North-East Coast

By THE SHIPPING WORLD'S Own Correspondent

WITH order books promising full employment for the next few years after the unprecedented flow of contracts during the first nine months of this year, shipyards on the North-East Coast enter the final weeks of 1951 with the knowledge that the area's tonnage output will be above that of any other postwar year. This is a considerable achievement when all the difficulties in regard to shortages of supply are considered. Whether the same progress in construction and repairs is maintained when the new steel allocation plan is introduced is a point open to doubt. Shiprepairers in particular cannot be too happy about the plan, and not without reason when contracts received at short notice call for extensive repairs requiring a substantial tonnage in a minimum of time. There is general support for the often expressed opinion that shipbuilding and shiprepairing establishments must have a high priority for an adequate steel supply because of their importance to the defence programme.

October saw an increase in contracts placed in the area as compared with September, and orders announced during the month amounted to 20 vessels, with an aggregate tonnage of 256,000 tons deadweight. An interesting feature of an analysis of the contracts is the amount of cargo carrying tonnage ordered, no fewer than 15 of the 20 ships being of this type. On the Tyne this year more than 500,000 tons gross of new construction has been ordered.

A November order which has given great satisfaction is that received by Swan, Hunter & Wigham Richardson, Ltd., Wallsend-on-Tyne, for a passenger liner for the Norwegian-America Line. This contract has been booked against foreign and home competition. The new liner, which is expected to be named the *Bergensfjord*, will have accommodation for 900 passengers, and is to be powered by two eight-cylinder, two-stroke diesel engines to give a service speed of 20 knots. A model of the ship is illustrated below.

Future Completions

From the fitting-out quays at Tyne yards there will be several ships leaving to enter service during the next few weeks. At the yard of Swan, Hunter & Wigham Richardson, Ltd., the 18,600-tons gross tanker *British Bulldog* will soon go on trials before being handed over to the British Tanker Co., Ltd. At the South Shields yard of John Readhead & Sons, Ltd., the 7,800-tons gross cargo ship *Crofter*, for T. & J. Harrison, Ltd., is expected to be ready for trials within the next week or two: this will be the first vessel handed over by the Shields firm for more than a year. At the yard of Vickers-Armstrongs, Ltd., Walker-on-Tyne, the *Atreus* (8,300 tons gross) is nearing completion for Alfred Holt & Company.

There will be two launches from Tyne yards during November, as compared with four during the previous month. A launch of interest last month was that of the 18,620-tons gross tanker *Velletia*, building for the Anglo-Saxon Petroleum Co., Ltd., by Swan, Hunter & Wigham Richardson, Ltd. On the berth vacated will be laid the keel of a tanker of 21,000 tons gross for Hilmar Reksten, Bergen. The *Velletia* is the third tanker of over 18,000 tons gross launched on the Tyne this year. Vickers-Armstrongs, Ltd., Walker-on-Tyne, who are also busy building big tankers, will this month launch the cargo ship *Alcinous* for Alfred Holt & Company, a sister ship to the *Atreus*.

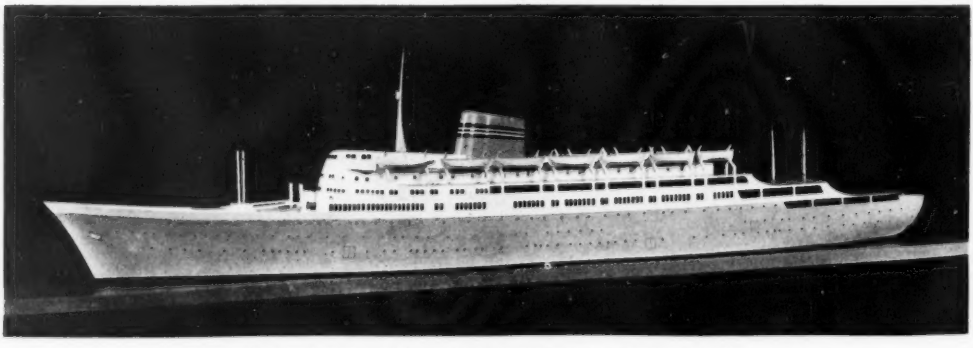
At the yard of the Middle Docks & Engineering Co., Ltd., South Shields, a start has been made on the joining of the fore and after parts of the 15,226-tons gross Norwegian tanker *Rondefjell*. It is expected that the vessel will be ready for trials before the end of the year. The South Shields repairers are also carrying out a survey and general repairs to the Norwegian steamer *Island*, recently salvaged after seven years below the water off the Norwegian coast.

Working Hours

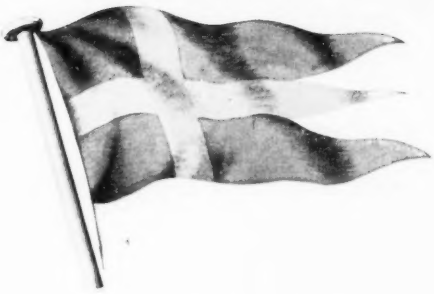
Shiprepairers in the area are being kept fully occupied, and contracts for conversion to oil burning still continue to arrive. The six-day working week during the winter months has been put into operation, and this tends to improve output, apart from reducing output through peak period electricity cuts. Staggered working is also now in operation at the request of the Northern Regional Board of Industry, and staff will work one late day each week during November, beginning work at 12 noon and finishing at 9.30 p.m.

There will be a change in the usual shipyard holidays at Christmas and the New Year at Tyne yards. Previously the establishments were closed only on Christmas Day, with two days' holiday at the New Year. The new arrangement is that the yards will be closed on Christmas Day, Boxing Day and New Year's Day, and so fall in line with the engineering shops.

In view of the increased cost of living, Tyneside engineers on duty outside their own district are to get higher lodging and travelling allowances. This was agreed upon by representatives of the North-East Coast Engineering Employers' Association and the Tyne District Committee of the Confederation of Shipbuilding and Engineering Unions. The lodging rate has been increased from 6s. 6d. to 8s. per day, or 56s. a week instead of 45s. 6d. The effect of the new subsistence rate on men travelling from home to jobs outside the area is that instead of being paid 3s. for a four-hour journey with an additional 6d. for every extra hour, the men will be paid 5s. plus 1s. for each extra hour.



Model of the new Norwegian passenger liner "Bergensfjord"



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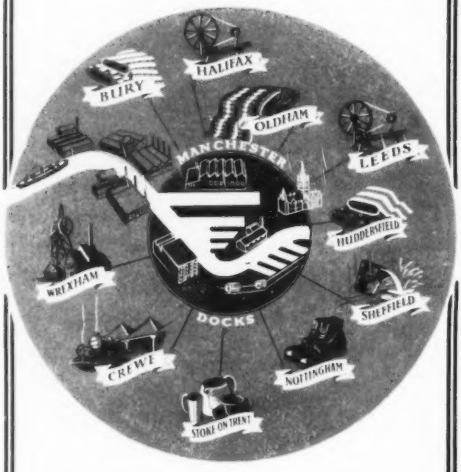

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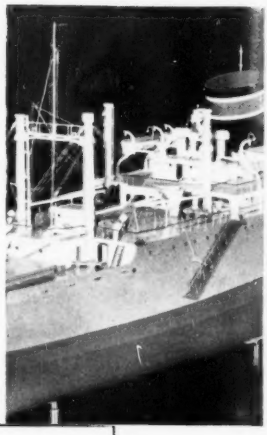

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THE ALLEN GAS TURBINE

DETAILS OF CONSTRUCTION OF AN ADMIRALTY GAS-TURBO GENERATOR

The advent in recent years of the gas turbine as a practical prime mover, with its potential advantages of compactness, light weight, and low maintenance requirements, in addition to those of self-contained operation and quick starting already associated with the diesel, led the Admiralty to consider the development of a gas turbine-driven alternator suitable for Naval requirements. In view of their long experience in the construction of steam turbo-generators for Naval service, W. H. Allen, Sons & Co., Ltd., of Bedford, were asked to take in hand the construction of a gas turbo-alternator, a development contract being placed with them by the Admiralty at the beginning of 1948. The firm began the design at the beginning of 1948, and the unit was successfully run at full speed and full power early this year. The results already achieved in such a short time have only been brought about by concentrating a new gas turbine team on the problems, and by the extension of existing facilities. The makers have set aside a section of their Biddenham works for the assembly of gas turbines and for the installation of special machine tools required for blade manufacture. In addition they have built, on behalf of the Admiralty, a fully equipped and instrumented test house. The work has been greatly facilitated by a consultancy agreement with the Bristol Aeroplane Co., Ltd., which entitles them to design data, advice on production methods, and the use of certain testing facilities.

After carefully balancing the conflicting requirements of low weight and space with reasonably good efficiency, W. H. Allen, Sons & Co., Ltd., decided on a comparatively simple open-cycle set having an axial-flow compressor with a compression ratio of 4½:1, driven by a two-stage turbine, an annular two-pass cross-flow heat exchanger, a multi-chamber combustion system disposed symmetrically round the engine, and a separate single-stage power turbine driving the Allen alternator through Allen-Stoeckicht epicyclic gearing. The set is within the required height of 7 ft. and has a length of 16 ft., and a width of 8 ft. 6 in. The total weight of the gas turbine, including heat exchanger but excluding alternator, is 8½ tons. The unit is without base-plate, a three-point mounting being effected by mounting the compressor independently. The supports on either side of the heat exchanger are flexible and take care of thermal expansion. The set is carried on resilient rubber mountings to minimise the effect of shock loading due to underwater explosions.

The Admiralty specification called for a set of 1,000 kW maximum continuous rating with a 20 per cent overload for 10 minutes, to be suitable for operation at all loads up to overload under temperate (60 deg. F.) or tropical (100 deg. F.) conditions, and capable of running satisfactorily in parallel with other steam turbo-alternators, the governing requirements being 2½ per cent speed change for 50 per cent load change and the ability to accept or shed 100 per cent load without the emergency gear operating. The fuel was to be diesel oil, Admiralty reference Fuel B.310, and a maximum fuel consumption of 1.27 lb./kW/hr. under tropical conditions in the zone 60 per cent to 100 per cent power was specified. Total head pressures of 14.1 lb. per sq. in. abs. at the compressor intake and 15.1 lb. per sq. in. abs. at the power turbine outlet were called for, thus allowing for very high inlet and exhaust trunking losses. The engine was to be entirely self-contained and to be as small as consistent with reasonable accessibility, the maximum height available being 7 ft., and every reasonable opportunity was to be taken to reduce weight without sacrificing reliability. Shock loadings of 40 g. upwards, 25 g. downwards and 15 g. athwartships were specified. Finally, a life of 100,000 hours was to be aimed at, this period being made up of 65,000 hours at 80 per cent power under temperate conditions, 33,000 hours at 80 per cent power under tropical conditions, and 2,000 hours at full power under tropical conditions.

BASIC DESIGN PARTICULARS

Continuous maximum rating at power turbine coupling, including fouling margin, b.h.p.	1,512
Estimated specific fuel consumption at C.M.R., lb. b.h.p./hr.	0.745
Estimated thermal efficiency at power turbine coupling at C.M.R.	19.75 per cent
Mass flow at C.M.R., lb./sec.	37
Maximum gas temperature under tropical conditions, C.	700
Maximum gas temperature under temperate conditions, C.	650
Compressor speed, r.p.m., approx.	8,000
Number of compressor stages	13
Number of compressor turbine stages	2
Estimated compressor adiabatic efficiency	84 per cent
Estimated compressor turbine adiabatic efficiency	85 per cent
Power turbine speed, r.p.m., approx.	6,750
Number of power turbine stages	1
Estimated power turbine adiabatic efficiency	84 per cent
Alternator speed, r.p.m., approx.	1,500
Type of combustion chambers	Straight through
Number of combustion chambers	8
Type of burner	"Simplex"
Number of heat exchanger passes, hot gas	1
Number of heat exchanger passes, cold air	2
Heat exchanger thermal ratio	70 per cent

Note.—It must be noted that the output stated is that obtained with the high inlet and exhaust losses specified. Without these abnormal losses the C.M.R. electrical output would be 1,250 kW (temperate conditions), while the thermal efficiency would be 24 per cent, and the specific fuel consumption 0.625 lb./b.h.p./hr.

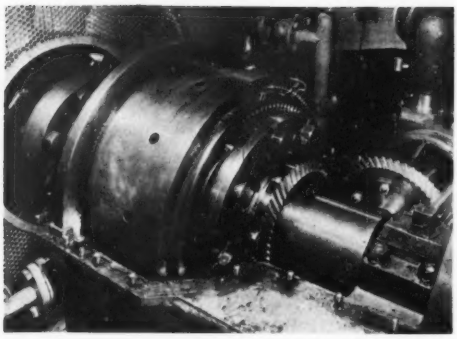
The mechanical design is based on the component assembly principle, so that each assembly is removable from the machine independently of the others. The compressor casing is split on the horizontal centreline and the top half is easily removable for inspection purposes without breaking any pipe joints. The centre bearing can be inspected by dismantling those air pipes connected to the top half of the casing and removing the top half casing, which is also split on the horizontal centreline. The two turbines can be readily inspected after removal of the compressor air delivery pipes and the combustion chambers, by splitting the casing vertically between the compressor turbine and power turbine and moving the compressor, with its associated turbine, away bodily, while supporting its weight by an overhead crane. If necessary, either the power turbine or the compressor turbine assembly can be removed endwise as a unit for further dismantling. The gearcase is split horizontally and the epicyclic gear assembly can be removed vertically for inspection or dismantling.

The compressor is of the axial-flow, multi-stage type. The rotor is of a special built-up design to reduce its moment of inertia to as small a value as possible in order to assist the speed governor during sudden large load changes. The inlet end of the shaft is manufactured from 1 per cent chrome molybdenum steel, and the outlet end of "Nitralloy" steel hardened at the bearing journals. The rotor wheels are of 1 per cent chrome molybdenum steel to B.S. En. 19, the discs being secured to each other on the faces of the bosses by means of dowel pins, through which the torque is transmitted. The complete rotor disc assembly and the shaft ends are clamped together by a special steel bolt passing through the centrally bored discs. Concentricity is maintained between the compressor disc assembly and the two stub shafts under all conditions of speed and temperature, since they are butted together on the faces with "Hirth" couplings.

Rotor Blades

The rotor blades, which are of aerofoil section, are each machined integral with its root from 13 per cent chrome stainless iron bar. The blades are wired together in groups of ten each for ease of assembly and are lightly located between the rims of adjacent wheels by means of a groove machined in the roots, which engages with a corresponding register on the discs. The assembly of the discs and blades is carried out with the axis of the rotor vertical. The blade profiles were machined by Centrax, Ltd. The stator blades are of monel metal rolled strip also of aerofoil section, cast into combined roots and spacers and secured in grooves in the casing. The casing is of cast steel construction, split on the horizontal centreline.

The heat exchanger is of the tubular, cross-flow, recuperative type arranged with a single pass on the hot exhaust gas side and two passes on the cold inlet air side. It is built of eight similar segments each containing just over 2,000 tubes, the total number being 16,500. The shell is of fabricated aluminised mild steel fitted with tubes of Yorkshire Copper Company's "Yorcalnic," 5/16-in. outside diameter, .020-in. thick, which are secured to the mild steel tube plates by expanded ferrules. The ferrules are expanded by means of a hydraulically-operated riveting gun, which was developed and supplied by Aviation Development, Ltd. The ferrules are threaded on to an expanding mandrel, which is then loaded into a riveting gun. The first ferrule and the mandrel are entered into the tube and on firing of the gun the mandrel is drawn back through the ferrule, expanding it and the tube into the tubeplate.



The double-helical epicyclic speed-reducing gear unit with top cover removed, fitted between the power turbine and alternator. View also shows bevel-gear drive to governor and tachometer

The machine is provided with a multi-chamber combustion system consisting of eight chambers disposed symmetrically about the axial centreline of the turbine shaft. The combustion chambers were designed and made by Joseph Lucas, Ltd. The inner flame tubes are of Nimonic 75 nickel chrome alloy, cooled by the secondary air. The outer air casing is of mild steel sheet aluminised and fitted with two bellows expansion pieces to take up the differential expansion between the turbine casing and the heat exchanger. Each end of the combustion chambers is secured by a special quick-release type of joint.

The compressor turbine is of the axial-flow type consisting of two stages. The two "G. 18 B" steel rotor wheels and the stub shafts are bolted together by means of a pre-stressed manganese molybdenum bolt passing through the centrally-bored wheels, and specially designed to withstand the high expansion which occurs in the wheels themselves. "Hirth" couplings are again utilised to locate the wheels and the Nitralloy steel stub shaft. The shaft is hardened on the bearing journals. The rotor blades were manufactured by the plunge grinding process patented by the Bristol Aeroplane Co., Ltd., and are of Nimonic 80.A, secured in axial fir-tree type serrations in the periphery of the wheels, each blade being fixed by a locking key. All stator blades are of Nimonic 80 material produced by the lost wax process of precision casting. The first-stage blades are riveted in groups to segmented strips to form assemblies easy to handle. Each second-stage blade is secured in a groove in the intermediate casing ring and positioned circumferentially by means of two pegs. The inner end of the blades has a cylindrical projection which fits into a radial hole in the diaphragm. This engagement is such that the stator blade is free to expand radially towards the centre of the diaphragm and the diaphragm to expand radially outwards. The diaphragm is protected by heat shields designed to prevent distortion due to the temperature gradient.

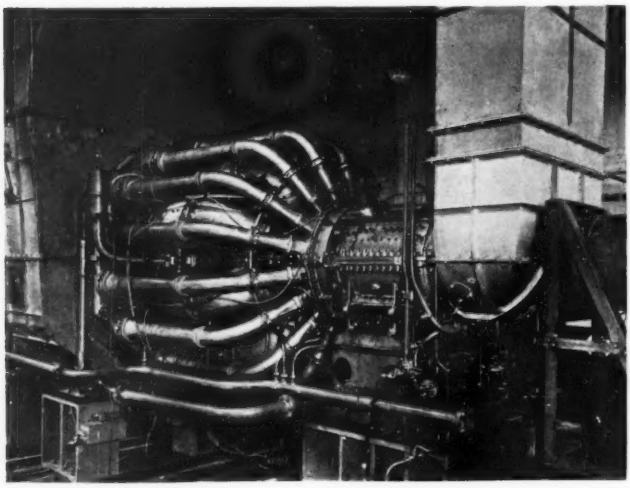
The casing consists of an inner and outer member designed to minimise thermal stresses due to expansion and to allow all parts to expand freely and yet remain concentric. A centre casing ring of heat-resisting material is located in the main casing by means of radial keys in such a manner that it is free to expand in a radical direction at all points on its circumference. Inner segmented shroud rings of H.R. Crown Max steel are arranged to expand circumferentially in grooves in this casing ring. This arrangement maintains the blade tip clearances at all loads, thus improving the efficiency and also making it quite safe to shut down and start up quickly. Cooling air from the compressor passes around the inner casing and through passages in the centre casing ring before joining the main gas stream. The coupled compressor and driving turbine shafts are supported in three bearings. Allowance for any malalignment of the shafts is made by connecting them by means of a quill shaft forming an extension of the turbine shaft, which is located in the bore of the compressor shaft. The driving torque is, however, transmitted through a normal gear-tooth-type muff coupling.

The Power Turbine

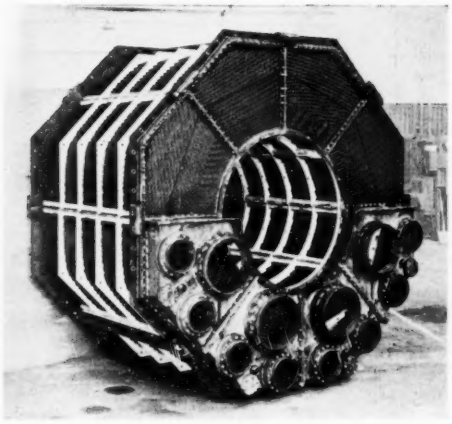
The power turbine is of the axial-flow type, consisting of a single-stage, mechanically independent of the compressor turbine. The materials and general construction of the turbine are similar to those already described for the compressor turbine, with the exception that the rotor wheel is of Jessop's "H.40" Ferritic steel. The bearing is connected radially to the outer main turbine casing by four radial fabricated struts passing through streamline airfoils, which are themselves integral with the mild-steel power turbine exhaust diffuser ducting assembly.

Great attention has been paid to the efficient cooling of the rotors and casing. There are several cooling systems so arranged that air from the compressor delivery passes through passages in the turbine casings and up both sides of the turbine rotor discs, finally joining the main gas stream. All main compressor and turbine bearings are of the sleeve type, the design generally following well-established steam turbine practice. Ball and roller bearings are incorporated in the auxiliary drives. The thrust bearings are of the Michell type. Journal bearings are fitted with thermo couples and the thrust bearings with hydraulic wear gauges.

Speed reduction between power turbine and alternator is achieved by a double-helical Allen-Stoeckicht epicyclic gear, which offers the maximum saving in weight and space. The



The 1,000-kW Allen gas turbine-driven alternator erected for testing. The lagged outer covers are removed to expose the compressor, turbines, air pipes, heat exchanger, combustion chambers, and instrumentation piping. The air intake trunking is shown on the right, and the exhaust outlets are arranged on each side of the heat exchanger



The heat exchanger with top four air headers removed to show build up of the eight similar segments

gear is designed on the well-known Stoeckicht principle (which ensures equal load sharing, not only between the planet wheels, but also between the helices), and is capable of transmitting 1,800 h.p. continuously from a turbine speed of 6,750 r.p.m. to an alternator speed of 1,500 r.p.m. There are no high-speed shaft bearings in the gear unit, the sun wheel, which is supported between the three planet wheels, being connected to the power turbine by means of a flexible coupling of the double-helical-tooth type.

The Allen alternator is of the open, self-ventilated, rotating-field, salient-pole type, continuously maximum rated to develop 1,000 kW at .8 power factor, 50 cycles, 3 phase, at a pressure of 400/430 volts when driven at 1,500 r.p.m. The machine is capable of developing 20 per cent overload for a period of 10 minutes. The unit has no baseplate, a three-point mounting being effected by mounting the compressor independently. The supports on either side of the inlet to the heat exchanger are flexible and take care of thermal expansion.

The lubricating-oil system closely follows usual steam turbine practice, embodying two separate valveless gear-type oil pumps. One pump delivers oil at approximately 120 lb./sq. in. gauge to the governor oil system, while the other delivers oil at approximately 45 lb./sq. in. gauge for bearing and gear-teeth lubrication.

Fuel Oil System

The turbine is provided with a simple fuel-oil system employing Lucas Simplex-type burners. The quantity of fuel delivered to the combustion chambers is varied by the opening of a throttle valve fitted in the fuel-supply pipe to the burners and controlled by the speed governor through an oil relay. A hand-controlled throttle valve is used when starting up. The fuel pump is of Lucas type "B," driven through gearing from the compressor shaft. An emergency shut-off valve is incorporated in the fuel system, which operates automatically in the event of the turbine overspeeding or on failure of the lubricating-oil pressure. Four of the eight interconnectors fitted between the combustion chambers are fitted with a torch igniter assembly, each assembly consisting of a thermocouple, a plug and the torch itself. Complete reliability at starting is ensured with this arrangement as each chamber is ignited directly from a torch. As a double safeguard in the event of one or more of the torches failing to ignite, the interconnectors ensure satisfactory ignition in all the chambers.

The speed control governor is of the centrifugal type, driven from the power turbine shaft and operates the fuel throttle valve through an oil relay. Overspeed trip governors of the shockproof unbalanced-ring-type are fitted to both the compressor and the power turbine shafts.

The starting procedure is briefly as follows: The compressor is run by an electric motor to approximately 1,500 r.p.m. (taking approximately 16 h.p.). The torch igniters are then lighted by means of an ordinary sparking plug and when the thermocouples indicate that they are operating satisfactorily, the main fuel supply is switched on to the burners. Further thermocouples indicate when each combustion chamber is alight and upon verification that all chambers are functioning satisfactorily, the turbine is accelerated on the hand throttle valve. The starter motor continues to assist the turbine up to a speed of about 2,500 r.p.m., when the turbine becomes self-sustaining and its speed overtakes the starter motor, which disengages by means of a free-wheel clutch. As the turbine speed approaches no-load speed, the automatic speed control governor takes over control of the fuel supply through the oil-operated throttle valve. The time required to reach the no-load condition is approximately one minute. Normally, the turbine is run for five minutes at this condition for warming up before proceeding to higher loads, but, if necessary, it is capable of accepting full load straight away, giving a time for obtaining full load of about 1½ minutes.

The Bristol Aeroplane Co., Ltd., has carried out tests on the compressor and compressor turbine as separate independent units. These tests proved the adiabatic compressor efficiency to be 86 per cent compared to the design figure of 84 per cent, and that the compressor turbine exactly achieved the design efficiency of 85 per cent at the designed point, and exceeded this figure by 1 per cent at lower duties. Pressure combustion tests carried out on the combustion chambers at the normal working pressure by Joseph Lucas, Ltd., proved the combustion efficiency to be slightly in excess of 98 per cent. Aerodynamic tests were undertaken by Allen, Sons & Co., at their Bedford works on scale models of the compressor inlet and outlet ducting, the heat exchanger return header and the power turbine exhaust diffuser, to reduce the flow-path losses to a minimum. Methods of securing the heat exchanger tubes were the subject of a number of experiments at Bedford, resulting in the use of expanded ferrules as already described. The unit, without the heat exchanger, has been on test since early this year. Full speed, full load and overload were achieved in the first series of tests with the minimum of mechanical "teething" troubles.

New G.E.C. Works at Witton

A completely new works, covering 2½ acres, has been put into production by the General Electric Co., Ltd., at Witton, Birmingham, the centre of the company's manufacture of heavy electrical equipment. The new building has been planned primarily for the erection and testing of large generating plant and provides facilities for building turbo-alternators of 10 MW and upwards, as well as large motors for ship propulsion. An interesting feature of the plant is an electronic dynamic balancing machine, designed by G.E.C., capable of balancing rotors up to 50 tons in weight to accuracy on one-tenth of an ounce at the periphery.

MARINE TRANSPORT OF OIL IN BULK

(*Continued from page* 360)

increase the upper level of each class without destroying its range.

The main classes, as now apparently conceived, can be described as follows:- first, the so called super tanker, primarily for crude carrying, now ranging from around 20,000 tons to 30,000 deadweight tons or so. The tendency here will be to concentrate on the maximum size in the range, and doubtless we shall hear more of even bigger sizes. Put, secondly, the general purpose range at 16,000 to 18,000 tons d.w., but including also a large number of ships of rather smaller sizes existing or building. These are, or will be, the main transporters of worldwide trade in products. Thirdly, we have the smaller sizes of up to 12,000 tons d.w. which exist, and which to some degree, for as far as one can see, will continue to be needed for trades where bigger ships cannot go, or where the traffic does not warrant larger tankers.

The variations of size and dimensions are considerable in these main ranges, according to the needs of particular operators, but the emphasis is bound to be, in all classes, towards the maximum dimensions for the class. Here, in the planning phase, there has to be weighed the wisdom of building numbers of units up to maximum potentiality in any one class, and the related problem of narrowing the range of usefulness of a particular class in order to permit increased dimensions, but with consequent loss of operational flexibility. Most operators would probably elect to build to considerably less than maximum potential utilisation in any one class, keeping a reserve in the next lower class for the marginal requirements in the class above. For this reason, also, we are likely to see construction proceeding in the smaller classes on a somewhat larger scale than the advocates of bigger and better tankers might expect.

TWO NEW PATROL VESSELS

SIMILAR SHIPS BUILT IN SCOTLAND AND DENMARK

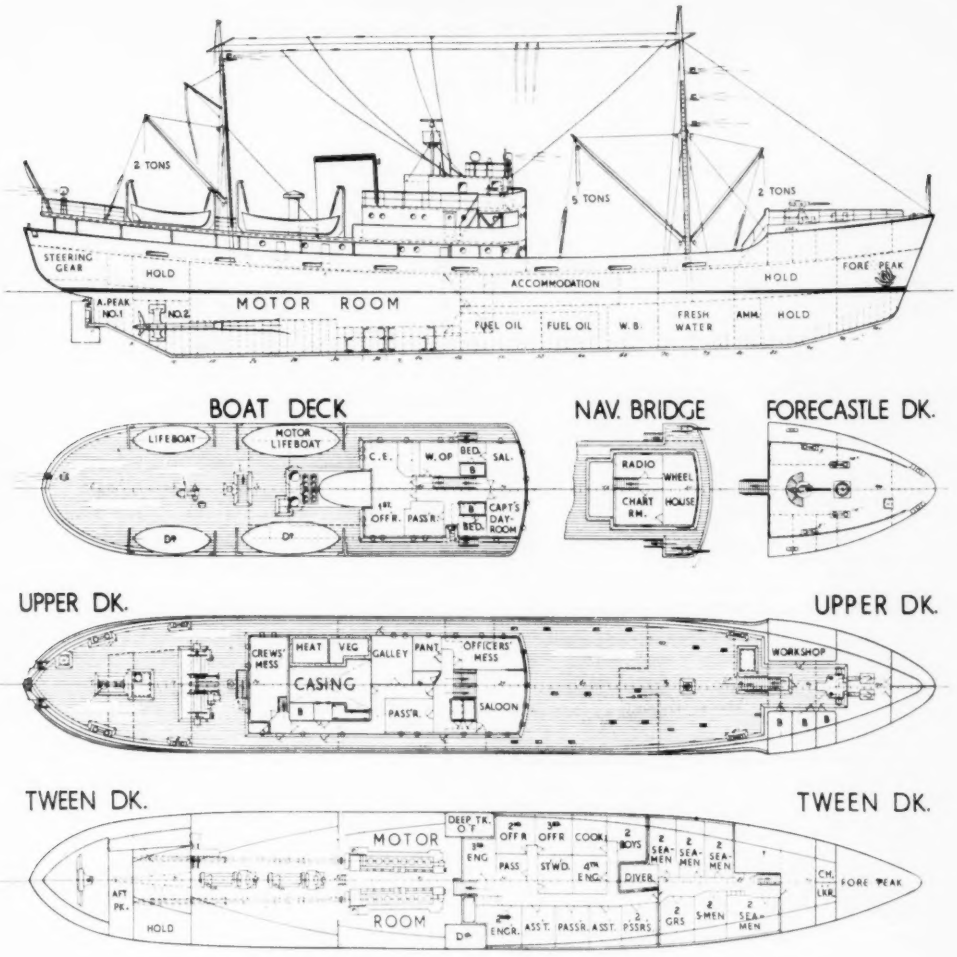
CERTAIN similarities in purpose and in design add interest to the comparison of two patrol vessels which have recently entered service, one built in Scotland and one in Denmark. Both are twin-screw motor vessels. The *Tor*, which was built by Aalborg Vaerft A/S for the Icelandic Government, is intended for operation in the North Atlantic as a coastguard and salvage vessel, while the *Brenda*, built by Wm. Denny & Bros., Ltd., Dumbarton, for the Scottish Home Department, has been specially designed for fishery patrol service round the coasts of Scotland.

The *Tor* is slightly the larger vessel, having an overall length of 206 ft. 6 in., a breadth moulded of 31 ft., and a depth to upper deck of 17 ft. The deadweight capacity of the *Tor* is about 240 tons with a draught of 13 ft., but the vessel may be loaded to a draught of 15 ft. 2½ in. with a deadweight of 440 tons, the corresponding displacements being 920 and 1,115 tons respectively. The ship was built to special survey of British Corporation, with ice strengthening. She is all-welded, except for a few riveted connections.

As the vessel is designed to operate in the North Atlantic, the accommodation has been arranged so that communication between all parts of the vessel can be achieved without the necessity of going on deck. As the accompanying drawing shows, the small house on the boat deck contains the captain's suite, cabins for the chief engineer, first officer and wireless operator, as well as a small passenger saloon. The bridge above, which is built of aluminium alloy, contains wheelhouse, chartroom and radio room. The main deckhouse on the upper deck amidships contains officers' mess and saloon forward, crew's mess aft and galley and storerooms between. Engineer and deck officers, as well as a few passengers, are accommodated in the tweendeck amidships, seamen and greasers having double-berth cabins in the forward tweendeck.

The forward hold is served by one 5-tons and one 2-tons derricks fitted to the foremast, and the after hold by a 2-tons derrick on the after mast, which is served by an electric winch on the boat deck. One 57-mm. gun is mounted on the forecastle and a 47-mm. gun on each side of the bridge. The vessel is suitable for salvage and towing work, a Thomas B. Thrige electric

The fishery patrol vessel "Brenda," built for the Scottish Home Department. The photograph above shows the Icelandic coastguard and salvage vessel "Tor"



Profile and general arrangement of the motor vessel "Tor"

trawl-winch being arranged on the after deck. The equipment of the vessel is complete with radio, echo sounder, submarine log, gyrocompass and radar.

The main propelling machinery consists of two Crossley two-stroke 8-cyl. diesel engines, capable of developing a maximum of 4,400 i.h.p. at 380 r.p.m. During the trial trip a speed of 18.04 knots was attained. The auxiliary machinery comprises two 4-cyl. diesel engines developing 165 h.p. at 500 r.p.m. Each engine is coupled direct to an 80-kW 220-volts D.C. generator. An additional diesel developing about 30 h.p. at 1,000 r.p.m., direct coupled to a 20-kW dynamo, is provided.

Particulars of the "Brenda"

The fishery patrol vessel *Brenda*, which is also illustrated, has an overall length of 189 ft. 6 in., a breadth moulded of 26 ft., and a depth to main deck of 11 ft. 6 in. The vessel has been built to Ministry of Transport requirements and special attention has been paid to the accommodation and galley equipment. The public rooms include a dining room, smokeroom and library, and additional cabins have been provided to suit official requirements. Mechanical ventilation and a low-pressure hot water heating system have been provided throughout the accommodation. Lifesaving appliances are in accordance with the latest Ministry requirements and include a motorboat for general purposes and independent patrol. Navigational equipment includes radar, radio, gyro-compass, echo sounder and a searchlight.

The main propelling machinery of the *Brenda* comprises two 7-cyl. British Polar diesel engines, driving twin screws. Electric power is provided by three 25-kW diesel generating sets, a secondary lighting installation being provided with power from batteries.

The October number of *Zodiac*, staff magazine of Cable & Wireless, Ltd., contains extracts of a report by Capt. T. A. Vickers, master of the cable ship *Norseman*, on the action taken to ensure the ship safely riding the recent hurricane in Kingston Harbour, Jamaica.

NEW CONTRACTS

Yards in Great Britain and Northern Ireland

Shipowners	No. of Ships	Type	Approximate Tonnages: Gross	Approximate Tonnages: Deadweight	Dimensions (ft.)	Speed (knots)	Propelling Machinery	Total h.p.	Engine Builders	Shipbuilders
Cia. Panamena Europea Nav., Panama	1	Tanker	—	16,500	—	—	5-cyl. diesel	—	Shipbuilders	Wm. Doxford
Norske Amerikalinje, Oslo	1	Passenger liner	18,000	—	—	—	Tw.-scr., 8-cyl. diesel	—	Stork Bros., Hengelo	Swan, Hunter & Wigham Richardson, Wallsend
Henry P. Lenaghan & Sons, Belfast	1	Cargo	—	9,000	420 b.p.	—	Tr.-exp. steam, Bauer-Wach turb.	—	Shipbuilders	Wm. Gray
Ceylon Govt.	14	Lighters	—	—	63 o.a. × 16 × 7	—	—	—	—	Millen Bros., Paisley
A/S Tonsbergs Hvalfangeri, Tonsberg	1	Whale catcher	—	—	—	—	Steam	—	Kaldnes M. V., Tonsberg	A. & J. Inglis
Commonwealth and Foreign Yards										
Hamburg-Amerika Linie	1	Cargo liner	6,700	10,000	523.3 o.a. × 63.1 × 39.2	16	Steam turbine	9,000	—	Howaldtswerke, Hamburg
Soc. Cherbourgeoise de Remorquage et de Sauvetage	1	Sea-going tug	—	—	164.08 × 32.5 × 16.08	—	Sin.-scr., two sin.-red. geared diesels	2,500	—	Ch. de Normandie
Kohlbrand Reederei, Hamburg	1	Cargo	1,000	1,700	212.6 × 35.8	—	Diesel	—	—	Ottensener Eisenwerke, Hamburg
Capt. Niko Kahler, Kiel-Wellingdorf	1	Coaster	350	500	—	—	Diesel	—	—	Lubecker Masch.-Ges.
Mathies Reederei K.G., Hamburg	1	Cargo	650	1,000	—	—	Diesel	1,000	—	J. J. Sietas, Hamburg-Neuenfelde
Hamburg owner	1	Cargo	—	1,000	—	—	Diesel	—	—	Martin Jansen, Leer
—	1	Cargo	850	1,350	201.8 × 35.1	12	Diesel	1,400	—	Yacht & Bootswerft Fr. Lurssen, Vegesack
Rederij Motorschip "Harm," Foxhol	1	Coaster	—	700	—	—	Industrie Diesel	400	—	Gebr. Bodewes Scheeps. "Volharding," Foxhol
"Hoornse Diep" Co., Groningen	1	Coaster	—	350	—	—	M.A.K. diesel	360	—	Noord-Nederlandsche Scheeps., Groningen
Richard Amlie & Co., Haugesund	1	Tanker	—	2,550	—	—	Diesel	—	—	Drammens Slip og Verksted
Anthony Veder & Co., Rotterdam	1	Cargo	—	6,450	—	—	Werkspoor-Lugt diesel	—	—	Boele's Scheeps. en Mach., Bolnes
Swiss owners	1	Cargo	—	9,100	—	—	M.A.N. diesel	3,500	—	C. van der Giessen & Zonen, Krimpen a/d Yssel
New Zealand owners	1	Coaster	—	250	—	—	Ruston diesel	300	—	Scheeps. Fa. Niestern, Delfzyl
Egyptian owners	1	Tug	—	—	—	—	Diesel	—	—	L. Smit & Zn., Kinderdijk
Portuguese owners	1	Hopper suction dredger	—	—	—	—	M.A.N. diesel	—	P. Smit, Jnr.	Verschure & Co.'s Scheeps., Amsterdam
Finnish owners	1	Coaster	—	900	—	—	Werkspoor diesel	650	—	Zaanlandsche Scheeps. Maats., Zaandam
Skips A/S Agnes, Mandal	1	Tanker	—	6,000	—	—	—	—	—	Kristiansands M.V.
H. M. Gehrckens, Hamburg	1	Cargo	800	1,100	198.5 × 33.8 × 21	—	Diesel	1,000	—	Schiffs. D. W. Kremer Sohn, Elmshorn
Westfalische Transport A. G., Dortmund	2	River tankers	—	920 (each)	219.2 × 26.9	—	M. W. M. diesel	500 (each)	—	Schiffs. & Masch. J. G. Hitzler, Lauenburg
Ned. Maats. voor de Walvischvaart, Amsterdam	1	Whale oil refinery	—	26,500	—	—	—	—	—	Wilton-Fijenoord, Schiedam
E. Kulukundis, New York	2	Tankers	—	24,000 (each)	—	—	De Laval steam turbine	—	—	Kockums M. V., Malmo
A/S Thor Dahl, Sandefjord	1	Whale catcher	—	—	—	16	Nordberg diesel	2,700	—	Moss Vaerfts og Dokk
Skibs A/S Bolships Co., Oslo	1	Cargo	—	6,000	399 × 58.7 × 21.83	—	Stork diesel	2,900	—	Scheeps. "De Hoop," Lobith
Ernst Russ, Hamburg	1	Cargo	—	4,350	—	—	Diesel	—	—	A. G. Weser, Bremen
Dampfs.-Ges. Neptun, Bremen	1	Cargo	2,700	4,800	—	—	Diesel	—	—	A. G. Weser, Seebeck, Bremerhaven
J. A. Reinecke, Hamburg	1	Cargo	750	1,200	—	—	Diesel	—	—	A. G. Weser, Seebeck, Bremerhaven
Oil Transfer Corpn., New York	1	Tug	145	—	—	—	Diesel	1,280	—	Jakobson Shipyard, Oyster Bay, N.Y.

LAUNCHES

Yards in Great Britain and Northern Ireland

Date	Shipowners	Ship's Name and/or Yard No.	Type	Approximate Tonnages: Gross	Approximate Tonnages: Deadweight	Dimensions (ft.)	Speed (knots)	Propelling Machinery	Total h.p.	Engine Builders	Shipbuilders
Oct. 23	John Harker, Ltd.	*Nidderdale H.* (244)	Lighter	172	—	—	—	Diesel	—	—	John Harker
Oct. 31	Esso Pet. Co.	*Esso Essex* (678)	Tank barge	131	—	—	—	Non-propelled	—	—	Richard Dunston, Hessle
Nov. 1	Docks & Inland Waterways Executive	*Severn Stream* (379)	Coaster	137	—	—	—	Diesel	—	—	Chas. Hill
Nov. 1	John Harker, Ltd.	*Wyesdale H.* (4)	Tanker	233	—	—	—	Diesel	—	—	Sharpness Shipyard
Nov. 12	Stamers Rederi A/S, Bergen	*Holmgar* (486)	Tanker	9,000	13,500	470 × 62 × 35.25	—	Harland-B. & W. diesel	—	—	Wm. Hamilton
Nov. 14	British Electricity Authority	*Hackney*	"Flat-iron" collier	1,730	2,700	257 l.w.l. × 39.5 × 18.5	10.5	Tr.-exp. reheat steam	—	George Clark (1938)	S. P. Austin

TRIAL TRIPS

Yards in Great Britain and Northern Ireland

Date	Shipowners	Ship's Name and/or Yard No.	Type	Approximate Tonnages Gross	Approximate Tonnages Deadweight	Dimensions (ft.)	Speed (knots)	Propelling Machinery	Total h.p.	Engine Builders	Shipbuilders
Oct. —	Port of London Authority	*Plagal*	Tug	160	—	85 × 24 × 12.5	—	Tw.-scr., 4-cyl. Crossley diesel	600	—	Richard Dunston, Hessle
Nov. —	Lorentzen & Co., Oslo	*France Stove* (1411)	Tanker	16,400	24,000	623.5 o.a. and 580 b.p. × 78 × 42.5	—	7-cyl., 2-str. B. & W. diesel	—	Shipbuilders	Harland & Wolff, Belfast
Nov. 8	F. T. Everard & Sons	*Similarity* (496)	Cargo	1,530	1,830	225 × 37.83 × 16	—	4-cyl., 2-str. "Sirron" diesel	800	Newbury Diesel Co.	Grange-mouth Dockyard
Nov. 12	Constants (S. Wales)	*Beltinge* (1251)	Cargo	3,000	4,628	340 o.a. × 46.5 × 24.29	10.5	Tr.-exp. steam	—	Shipbuilders	Wm. Gray
Nov. 13	Ellerman & Bucknall	*City of Brisbane* (1210)	Cargo liner	11,000	12,000	520 b.p. × 71 × 45	—	Dble.-red. geared turbine	—	Shipbuilders	Cammell Laird
				Commonwealth and Foreign Yards							
—	Iino Kaiun K. K.	*Eiho Maru*	Tanker	11,960	18,000	534.75 × 71.5 × 39	—	8-cyl., 2-str. M.A.N. diesel	8,000	Shipbuilders	East Japan Heavy Industries, Yokohama
—	Shin Nihon K. K.	*Fujiharu Maru*	Cargo	6,830	9,950	433.08 × 59.08 × 32.9	—	7-cyl., 2-str. Sulzer diesel	5,000	Shipbuilders	West Japan Heavy Industries, Nagasaki
—	Otto Alfred Muller	*Gretchen Muller*	Cargo	1,400	—	212.82 × 34.5	12	Wumag-Krupp diesel	1,175	—	Howaldts-werke, Kiel
—	Nippon Yusen K. K., Tokyo	*Heian Maru*	Cargo	6,800	9,950	433.08 × 59.08 × 32.9	—	7-cyl., 2-str. Sulzer diesel	5,000	Shipbuilders	West Japan Heavy Industries, Nagasaki
—	J. H. Reckmann	*Heimo Reckmann*	Cargo	1,250	—	208.33 × 34	12	4-str., M.A.K. diesel	1,120	—	Nobiskrug Werft
—	Nippon Yusen K. K.	*Heiyo Maru*	Cargo	6,851	9,950	433.08 × 59.08 × 32.9	—	7-cyl., 2-str. Sulzer diesel	5,000	Shipbuilders	West Japan Heavy Industries, Nagasaki
—	H. E. Horn, Hamburg	*Hornsund*	Cargo	4,032	8,200	432.66 × 55.5 × 21.5 (draught)	12	5-cyl., M.A.N. diesel	3,300	—	Deutsche Werft., Hamburg
—	Great Eastern Shipping Co., Bombay	*Jag Ganga* and *Jag Jamma*	Cargo and passenger	1,527 (each)	1,971 (each)	225 b.p. × 40.08 × 17.4	10.5	8-cyl., 4-str. M.A.N. diesel	1,000 (each)	Shipbuilders	Central Japan Heavy Industries, Kobe
—	Kawasaki Kisen K. K.	*Kazukawa Maru*	Cargo	6,306	8,700	419.92 × 56.75 × 31.9	—	7-cyl., 2-str. M.A.N. diesel	5,000	Shipbuilders	Kawasaki Heavy Industries
—	Meiji Shipping Co.	*Meitoku Maru*	Cargo	7,000	—	420 b.p. × 59.08 × 33.2	13.5	8-cyl., 2-str. B. & W. diesel	4,500	Shipbuilders	Mitsui Zosen K.K., Tamano
—	Taiyo Fishery Co.	*Nisshin Maru*	Whaling factory vessel	17,000	23,000	575 b.p. × 76.66 × 56.42	14.5	8-cyl. M.A.N. diesel	9,500	Shipbuilders	Kawasaki Heavy Industreis
—	Johannes Fritzen Shipping Co.	*Reimar Edzard Fritzen*	Cargo	6,170	9,650	472 × 57.5	13	2-str. M.A.N. diesel	3,200	—	Nordsee-werke, Emden
—	Ernst Russ	*Reinhart Lorenz Russ*	Cargo	2,700	5,000	370.33 × 52.5 × 17.1	13	5-cyl., 2-str. diesel	3,000	Waggon-und Maschb., Hamburg	Lubecker Flender-werke
—	Hvalfanger A/S Rosshavet	*Ross Sea*	Tanker	10,625	16,000	495 × 67.7 × 36.5	13.75	6-cyl., 2-str. Stork diesel	5,500	Shipbuilders	Netherlands Dock & S. B. Co., Amsterdam
—	Toyo Kisen K. K.	*Shoyo Maru*	Cargo	6,600	—	426.5 × 60 × 32.5	14	M.A.N. diesel	4,700	—	East Japan Heavy Industries, Yokohama
—	East Asiatic Co., Copenhagen	*Siam*	Tanker	10,686	15,500	506.08 × 66.75 × 38	14.5	7-cyl., 2-str B. & W. diesel	8,000	Mitsui S.B. & E. Co., Tamano	Harima S.B. & E. Co., Aioi
—	Toho Kaiun K. K.	*Toho Maru*	Cargo	6,849	9,950	433.08 × 59.08 × 32.9	—	7-cyl., 2-str. Sulzer diesel	5,000	Shipbuilders	West Japan Heavy Industries, Nagasaki
Oct. —	Sovtorgflot, Moscow	*Lev Tolstoy*	Cargo	1,711	3,000	301.9 o.a. and 278.9 b.p. × 27.9 × 18.7 (draught)	14	Werkspoor diesel	1,600	—	Jos. Boel et Fils, Tamise
Oct. —	Hamburg Sud-Amerikanische	*Santa Catarina*	Cargo	7,030	9,700	479 o.a. × 61 × 24.7	13	M.A.N. diesel	4,000	—	Howaldts-werke, Hamburg
Oct. —	Dammers & van der Heide, Rotterdam	*Tom van der Heide*	Cargo	499	840	221.33 o.a. × 29.5 × 16	14.5	9-cyl M.A.N. diesel	1,000	—	Werf Gusto, Schiedam
Oct. 11	—	*Irtysh*	Tanker	—	1,275	204.33 b.p. × 34 × 14.83	—	Nohab diesel	900	—	Norrkopings Varv
Oct. 13	C.N.P. Frota Nacional de Petroleiros	*Bittencourt Sampaio* (120)	Tanker	11,000	16,200	526 o.a. × 64 × 38.25	14.5	M.A.N. diesel	6,300	—	Uddevalla-varvet
Oct. 18	Dammers & van der Heide, Rotterdam	*Casasblanca*	Cargo	499	840	221.33 o.a. × 29.5 × 16	14.5	9-cyl. M.A.N. diesel	1,000	—	Werf Gusto, Schiedam
Oct. 18	Swedish American Line	*Maltesohm*	Cargo liner	—	7,425	430 b.p. × 58.5 × 26.25	16	8-cyl., 2-str. B. & W. diesel	7,500	Shipbuilders	Eriksbergs M.V., Gothenburg
Oct. 24	A. P. Moller, Copenhagen	*Jeppesen Maersk* (704)	Cargo	—	9,625	445 b.p. × 63.5 × 41.5	17.25	10-cyl., 2-str. diesel	9,200	Shipbuilders	Burmeister & Wain, Copenhagen
Oct. 25	Afrika-Linien, Hamburg	*Transvaal*	Cargo	4,100	6,300	413 × 55.08	13.5	M.A.N. diesel	3,300	—	Flensburger Schiffs.-Ges.
Oct. 26	Rederi A.B. Gefion, Helsingborg	*Inga Gorthon* (338)	Cargo liner	1,959	3,450	321.92 o.a. and 300 b.p. × 45 × 19.66	14.5	9-cyl., 2-str. M.A.N. diesel	2,550	Shipbuilders	Kockums M.V., Malmo
Oct. 31	Trafik A/B Grangesberg-Oxelosund, Stockholm	*Pajala*	Combined ore and oil carrier	12,500	15,650	532.5 o.a. × 68 × 38.5	14	8-cyl., 2-str. diesel	7,350	Shipbuilders	Gotaverken, Gothenburg
Nov. —	Royal Interocean Lines, Amsterdam	*Tjiluwah*	Pass. and cargo	8,630	6,115 (metric)	479.42 o.a. and 440 b.p. × 62.33 × 36	16	Tw.-scr., 8-cyl., 4-str. diesel	6,700	N. V. Werkspoor, Amsterdam	C. van der Giesson & Zonen, Krimpen a/d Yssel
Nov. 6	Rederi A/B Transoil, Gothenburg	*Bia*	Tanker	—	17,260	540.66 o.a. × 66 × 39.25	14.5	9-cyl., 2-str. diesel	8,300	Shipbuilders	Gotaverken, Gothenburg

MR. ARTHUR PARKINSON has been appointed a director of Crompton Parkinson, Ltd., and will undertake special duties Mr. Parkinson served an apprenticeship with the company and later went up to Wadham College, Oxford. In 1937 he spent some time in the company's Australian works, and in 1938 was appointed works manager of the C.P. fan and small motor factory at Edmonton, Middlesex. From 1939 to 1946 he served in the R.E.M.E. and the Ministry of Supply. He became lamp sales manager of the C.P. supplies division in 1946 and in 1947 was appointed assistant general sales manager, supplies division

MR. C. H. GIBSON has been appointed to succeed Mr. T. A. Guest as mechanical engineer of the Manchester Ship Canal Company. Mr. Gibson, who has been assistant to the mechanical engineer since 1936, joined the company in 1927, after having served with the Manchester Regiment. In 1938 he was appointed mechanical superintendent at Ellesmere Port, and during his period of office there a large development p ogramme was carried out under his supervision, including the building of a new quay, the construction of transit sheds and the installation of a double unit coal conveyor.

MARITIME NEWS IN BRIEF

From Correspondents at Home and Overseas

THE Fourth International Mechanical Engineering Congress will be held in Stockholm from June 4 to 10, 1952, when papers and discussions will be centred on improvements of materials used in engineering manufacture. This congress is organised by the Trade Associations serving the mechanical engineering industries of twelve European countries (Belgium, Denmark, Finland, France, Western Germany, Great Britain, Italy, Netherlands, Norway, Spain, Sweden and Switzerland). A meeting of the organising committee comprising representatives of all these countries was held in London under the chairmanship of Mr. A. W. Berry, director of the British Engineers' Association.

CAPT. G. S. STABLE, the P. & O. Commodore, is to retire on December 21. His ship, the *Canton*, will be taken over by Capt. E. R. Bodley. Capt. H. C. C. Forsyth, who commands the *Himalaya*, is retiring from sea duties on November 22, but will take up duties with the company ashore. His successor will be Capt. S. W. S. Dickson who takes over after commanding the *Strathaeden* for seven years.

MR. J. G. BURNETT has been elected chairman of the Liverpool District Association of Chartered Shipbrokers in succession to Mr. O. J. Knudsen, who had occupied the chair for the last three years.

THE death has occurred of Mr. F. S. Harris, managing director of P. K. Harris & Sons, Ltd., shipbuilders and repairers, of Apoledore, North Devon.

WALLEM & CO. (INDIA), LTD., have moved their offices to Warden House, Sir Phirozshah Mehta Road, Bombay.

* * * *

A NEW private telephone exchange for the Port of London Authority was inaugurated last week when Sir John Anderson, chairman of the Port of London Authority, made a telephone call to the Postmaster General. The new exchange, which has been supplied by Siemens Bros. & Co., Ltd., replaces one by the same firm which had been in service for 26 years, and is the first of its type to be installed in Great Britain. The new exchange involves no change in procedure for callers, and the number remains Royal 2000.

ALDERMAN B. O. DAVIES and Mr. Stephen Furness have been re-elected chairman and deputy-chairman respectively of the Tees Conservancy Commission. Aldermen L. G. Allen and J. W. Welch have been appointed to the Commission as representatives of Middlesbrough Town Council and Aldermen A. Ross and M. M. Kelly as representatives of Stockton Town Council.

CLELANDS (SUCCESSORS), LTD., Wallsend-on-Tyne, are completing a contract for twelve seagoing barges, each of 550 tons deadweight, for service in India. Built for British firms in India the barges, after being built on the stocks, are dismantled and cut into packing cases for shipment to their destination. Each barge needs about 300 cases or bundles. Eleven tons of rivets are needed for each barge.

THE motorship *Scott* arrived in the Port of London from Amsterdam on November 7 and was entered at the London Custom House with the 1951 rotation number 10,000. This figure has been reached much earlier this year than normally, and reflects London's steady return to prewar tonnage.

SIR STANLEY AUBREY, Mr. L. G. Cox and Mr. K. G. McNeil have been elected to serve on the Committee of Lloyd's for a period of four years from January 1, 1952, in place of Mr. T. L. Forbes, Sir Eustace Pulbrook and Mr. A. B. Stewart, who retire by rotation.

THE DEATH HAS occurred in New York of Mr. Morris Malkin, president of the West India Steamship Company, at the age of 60.

THE DEATH has occurred of Mr. J. H. Bonnyman, a consulting naval architect and engineer. He was 70.

* * * *

THE HON. J. S. MACLAY, M.P., Minister of Transport and Civil Aviation, has appointed Mr. Harold A. Watkinson, M.P. for Woking, as his Parliamentary private secretary. Mr. Maclay has appointed Mr. O. F. Gingell (Transport) and Mr. S. M. A. Banister (Civil Aviation) to be his joint principal private secretaries.

DORMAN & SMITH, LTD., will give three demonstrations of the Dorman miniature circuit breaker at St. Ermin's Hotel, Westminster, S.W.1, on November 26 and 27. A certain number of invitations are available for interested persons who care to apply to Dorman & Smith, Ltd., 10 Emerald Street, W.C.1.

THE death has occurred of Mr. Frank Fisher, chairman of J. Fisher & Sons, Ltd. Mr. Fisher also had a controlling interest in the Frontier Town Steamship Co., Ltd., the Newry & Kilkeel Steamship Co., Ltd., and the Antrim Iron Ore Co., Ltd. He was a former chairman of the Carlingford Lough Commissioners.

THE FRENCH passenger liner *de Grasse* is being taken off the trans-Atlantic run, at least for the present. In April she will join the *Colombie* in the service to the West Indies, and in the meantime is being altered to improve her suitability for service in a hotter climate.

THE NORTHERN area sales office of High Duty Alloys, Ltd., has been moved to Colwyn Chambers, 24 Mosley Street, Manchester, 2. (Telephone: Manchester Central 2758.)

THE formal investigation into the loss of the *Eleth* on a voyage from Birkenhead to Dundalk, Co. Louth, on February 2 will be heard at Liverpool on November 27.

STEEL production in October was at an annual rate of 15,629,000 tons, compared with a rate of 15,749,000 tons in the previous month and of 17,049,000 tons in October, 1950.

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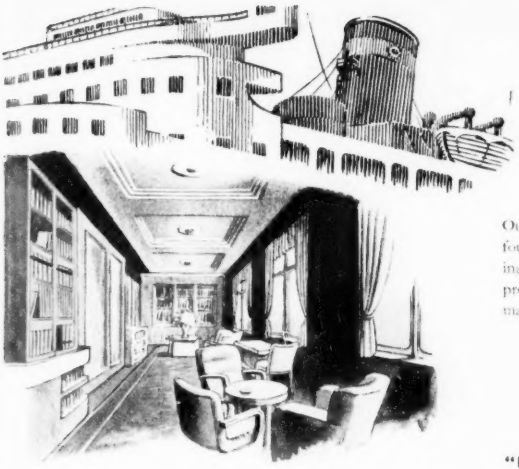

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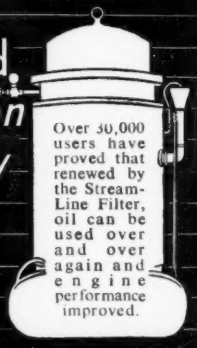

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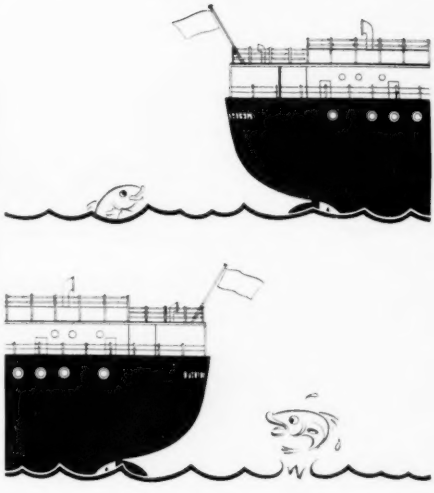

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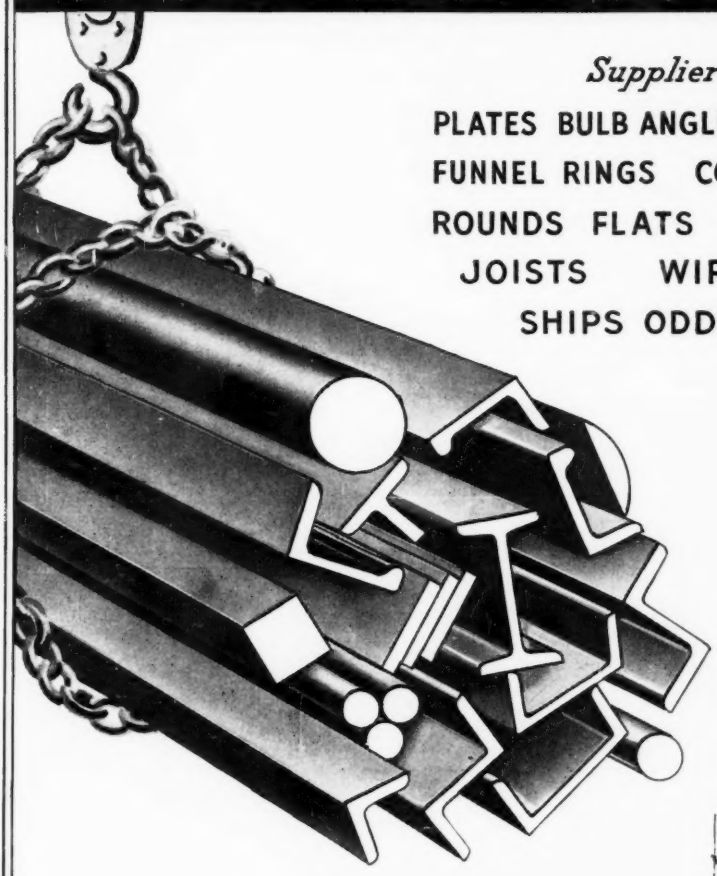

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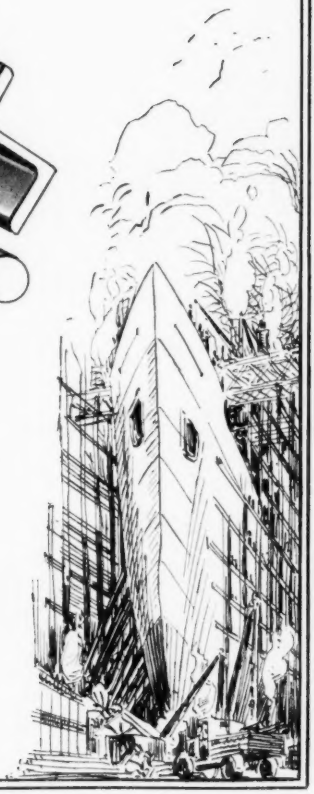

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